

**ANGLIA RUSKIN UNIVERSITY**

**FACULTY OF ARTS, LAW AND SOCIAL  
SCIENCES**

**The Impact of IFRS-based Chinese Accounting  
Standards on Accounting Conservatism**

**DOCTOR OF PHILOSOPHY**

**CHENG XUEQING**

**2019**

Key words: IFRS convergence, conservatism, information asymmetry, monitoring costs, state-owned enterprises, state-owned banks

## **Acknowledgements**

I would like to thank all those who supported me during my writing.

I am sincerely grateful to Dr Lenka, my supervisor, for her constant encouragement and guidance at all the stages of my research. She provided me with valuable advice in academic research. Her helpful suggestions, incisive comments and constructive criticism have made great contributions towards the completion of this thesis. She has provided tremendous help in writing literature reviews and developing an analytical framework, which deserves gratitude than I can find words to express. Indeed, it is impossible to complete this thesis without her relentless efforts in modifying and perfecting my draft. In addition, I am greatly indebted to Dr Didem for her valuable suggestions in the process of writing my thesis. I do appreciate their professional guidance, encouragement and patience during the process of writing. They spent a considerable amount of time reading my draft and proposing recommendations for further revisions.

I would also like to express my gratitude to all of its teachers and staff at the university for providing us with a superior learning environment.

Last but not least, I would like to thank my friends and family, who have been always assisting and supporting for me.

# Abstract

In 2007, China implemented mandatory accounting standards reforms in an effort to converge with the IFRS (International Financial Reporting Standards). The new accounting system in China is undergoing rapid change in order to adapt to the increasingly complex economic situations. The tremendous changes in the standards related to conservatism mean the stakeholders of the financial reporting, especially the standards-setting board, investors and government, cannot neglect how the IFRS convergence accounting standards affects the conservatism of Chinese-listed enterprises. Therefore, this thesis employs listed Chinese enterprises as a research sample to empirically examine the correlation between accounting system reforms, and the conditionally and unconditionally conservative financial statements of Chinese public enterprises.

For the conditional conservatism, this thesis takes the listed Chinese companies from 2002 to 2010 as a sample and uses the accrual cash flow model (2005) and Basu model (1997) to investigate the impact of IFRS convergence standards in 2006 on conditional conservatism. This thesis finds that after the implementation of IFRS-convergent standards, Chinese-listed enterprises employ less conservative accounting policies because the IFRS convergence altered the ex-ante information asymmetry and monitoring costs of China's listed firms. This empirical finding is significant and robust under both the accrual cash flow model and Basu model. Further, this thesis explores the in-depth mechanism of the effects of the new standards, which has the following findings:

1. After the implementation of IFRS convergence, the decrease in the degree of conditional conservatism is higher for enterprises with the more complex business model (or more information asymmetry), which supports the assumption that IFRS convergence increases the comparability of financial reports and disclosure environment and reduces information asymmetry.
2. After following IFRS convergence, the reduction in the degree of conditionally conservative accounting is higher for non-state-owned enterprises compared with companies with state-owned enterprises.
3. The reduction in the degree of conditionally conservative accounting is higher for firms with more debt-monitoring costs than firms with less monitoring costs, which supports the assumption that IFRS convergence reduces monitoring costs of debt holders.
4. After following Chinese new standards, the reduction in the degree of conditionally conservative accounting is higher with firms who borrow from state-owned banks compared with firms who borrow from non-state-owned banks.

For unconditional conservatism, this thesis also tests and finds the existence of unconditional conservatism among China's listed companies in the sample period (2002-2010) and the IFRS convergence accounting standards have improved the unconditional conservatism level of the listed companies in China. Before 2006, there were serious idle fixed assets that were not depreciated for the listed Chinese companies under former standards. Changes in the requirements of the IFRS-based standards for this issue will increase unconditional conservatism. In addition, this thesis finds that the increase in the degree of unconditionally conservative accounting after the implementation of the IFRS-based standards is higher with state-owned enterprises compared with companies with non-state-owned. The main reason leading to this result is that the state-owned enterprises had more serious idle fixed assets issue before 2006.

# Contents

Chapter One: Introduction.....	1
1.1 Purposes and backgrounds .....	1
1.2 Research objectives.....	2
1.3 Research methods.....	4
1.4 Statements of gap and contributions to knowledge.....	6
1.5 Thesis structure.....	8
Chapter Two: Literature review .....	9
2.1 Relevant definitions of conservatism .....	9
2.1.1 Conservatism defined by accounting standard-setting bodies .....	9
2.1.2 Conservatism defined by empirical studies .....	11
2.2 Conservatism classification .....	13
2.2.1 Conditional conservatism.....	13
2.2.2 Unconditional conservatism .....	14
2.2.3 Similarities and differences.....	14
2.3 Conservatism motivations and demands of China's listed companies for conservatism .....	16
2.3.1 Contract motivation .....	16
2.3.2 Litigation motivation .....	23
2.3.3 Taxation motivation .....	28
2.3.4 Regulation motivation.....	31
2.4 Relationship map of stakeholders in incentives of conservatism .....	37
2.5 Consequences of conservatism.....	45
2.6 Causality flow from conservatism to firm value .....	47
2.7 Analysis for the influence of Chinese IFRS convergence on conservatism based on causality flow .....	52
2.7.1 Effects of China's IFRS adoption .....	52
2.7.2 Impacts of Chinese IFRS-adoption on conservatism .....	54
Chapter Three: Application of accounting conservatism measurement methods in China .....	60
3.1 Factors that have influenced the efficiency of the Chinese stock exchange and their implications for conservatism measurement methods .....	62
3.1.1 Restrictions to trade in A shares and B shares.....	62
3.1.2 Transformation of non-tradable shares into tradable shares (split share reform).....	64
3.1.3 Lift of the ban on short selling .....	65
3.2 Implications of China's share market efficiency for the application of conservatism measurement methods in China .....	66
3.2.1 Implications for unconditional conservatism measurement methods .....	68
3.2.2 Implications for conditional conservatism measurement methods .....	70
3.3 Selected measurement methods for conditional and unconditional conservatism in China .....	73
3.3.1 Selected measurement methods for unconditional conservatism in China .....	73
3.3.2 Selected measurement methods for conditional conservatism in China .....	74
Chapter Four: Hypotheses development for conditional and unconditional conservatism .....	75
4.1 Correlation between conditional conservatism and IFRS-based standards in China.....	75
4.2 Influencing mechanism between IFRS convergence and Firms' conditional conservatism .....	79
4.3 Effects of IFRS adoption on unconditional conservatism.....	84
Chapter Five: Research methods for conditional conservatism .....	89
5.1 Accrual-cash flow method of conditional conservatism.....	89
5.2 Basu's measurement.....	97
5.3 Accrual model specification for measuring impacts of IFRS-adoption .....	102
5.4 Basu model specification for measuring impacts of IFRS-adoption.....	103
5.5 Model specification with control variables .....	104

5.6 Book value-to-market value (BTM) method .....	104
5.7 Book-to-market model specification for measuring impacts of IFRS-adoption .....	109
Chapter Six: Data and sample .....	111
6.1 Data and sample for conditional conservatism.....	111
6.2 Descriptive statistics for conditional conservatism.....	113
6.3 Data and sample for unconditional conservatism .....	115
6.4 Descriptive statistics for unconditional conservatism.....	116
Chapter Seven: Main empirical findings for conditional conservatism .....	118
7.1 Descriptive evidence for impacts of IFRS convergence.....	118
7.2 Regressive evidence for impacts of IFRS convergence.....	122
7.3 Moderating effects of ex-ante information asymmetry.....	128
7.4 Moderating effects of state ownership of firms .....	136
7.5 Moderating effects of financial constraints .....	140
7.6 Moderating effects of state ownership of banks .....	146
Chapter Eight: Main empirical findings for unconditional conservatism.....	153
8.1 Descriptive evidence for impacts of IFRS convergence on unconditional conservatism .....	153
8.2 Regressive evidence for impacts of IFRS convergence on unconditional conservatism .....	156
8.3 Impacts of state ownership of enterprises .....	158
8.4 Sensitivity analysis .....	159
Chapter Nine: Conclusions.....	164
9.1 Summary of main findings .....	164
9.2 Significance .....	165
9.3 Research limitations and future perspective .....	166
Appendix.....	168
Methods Review .....	168
Measurement methods .....	168
Net assets measurement method.....	169
Earnings and accruals measurement method.....	173
Earnings–share return measurement method.....	180
Accrual–cash flow measurement method .....	185
Event-driven measurement method.....	185
References: .....	192

# Chapter One: Introduction

## 1.1 Purposes and backgrounds

The Chinese accounting standards was revolutionised in 2006 to a major extent when China implemented mandatory accounting system reforms in an effort to integrate with the IFRS (Tweedie, 2006). The Accounting Standards for Business Enterprises (ASBEs), including one basic standard and 38 specific standards for dealing with specific issues, was implemented in force on 1<sup>st</sup> January 2007, after which all Chinese public firms should follow the ASBEs in preparing their financial reports. The ASBEs nearly cover every field of the IFRS. The development of the ASBEs was in accordance with the IFRS's purpose of offering higher comparable and quality accounting information. The ASBEs have higher requirements for financial reports of listed companies in China, especially in areas related to fair value measurements, business combinations and related party disclosure, fundamentally improving the accounting practices in China.

The most significant difference in Chinese standards of 2006 is the re-introduction of a fair value model, which use related valuation in current markets to reflect the value of assets and liabilities. In the new Chinese standard, the fair value model has been reintroduced into various fields involving accounting valuation, such as intangible assets, investment property, non-monetary assets exchange, revenue recognition, debt restructuring, etc. The conservative accounting principle means that accountants tend to accelerate the recognition of expenses and losses and delay the recognition of revenue (Al-Sakini and Al-Awawdeh, 2015). However, the application of the fair value measurement demonstrates that the attitude of the Chinese standards-setting board to conservatism is changing.

Although the conservatism has existed for more than 500 years, its effects are gradually weakening with the rise of the IFRS in recent decades. IFRS requires or encourages companies to adopt the fair value measurement in several selected fields. In addition, the US FASB (Financial Accounting Standards Board) also made several important decisions to champion the adoption of fair value, such as the FASB in 2001 prohibited companies amortizing goodwill (Jennings, et al, 2001).

After the establishment of China in 1949, its social system and economy began rapidly changing. With this change, China's accounting system is also undergoing rapid change in order to adapt to different economic situations. China's history of economy and accounting development can be divided into three periods: the planned economy period (1949-1978), planned commodity economy period (1979-1992), and socialist market economy period (after 1992) (Wang, et al, 2009). Since its establishment, China has

undergone considerable market-oriented reforms. However, the conservatism was denied in the Chinese accounting system during the first two periods (1949-1978 and 1979-1992). Chinese government, which is also the accounting standards-setting board in China, condemn conservatism as ‘hypocritical’ and banned this principle during these periods (1949-1978 and 1979-1992).

During the socialist market economy period, China went through changes in their accounting system three times (in 1992, in 2001, and in 2006). The rapid change and development of the Chinese economy caused a lack of experience while building an accounting system to suit the new economic system. China therefore had to learn from internationally accepted accounting standards. However, there persists the issue that the Chinese economy and market are significantly different than those of Western countries like the USA, UK and Germany - countries which the Chinese accounting system mainly draws from. Therefore, previous standards in 1992 and 2001 only introduced some very basic concepts and methods and are strongly conservative. With the deepening of economic globalization, new Chinese standards (the ASBEs) in 2006 drew extensively from western accounting standards, for example, the fair value measurement model was introduced into particular areas (e.g. the accounting of financial instruments). These changes indicate that the effect of conservatism principles in the financial reporting of Chinese-listed companies is reducing or may be even disappearing.

In this context, the main aim of this thesis is to study how new Chinese standards (the ASBEs) affect the level of conditional and unconditional conservatism in the financial reports of Chinese public firms. Firstly, this thesis systematically reviews the relevant literature on conservatism and measurement methods. Then, this thesis investigates the effects of new Chinese standards on the conservatism in the financial report of listed enterprises and its influencing mechanism. In particular, this thesis examines the validity of all hypotheses that the adoption of new Chinese accounting standards induces the changes in conservatism of Chinese-listed enterprises, as well as the in-depth mechanism of the effects of the ASBEs in China.

## **1.2 Research objectives**

In the conditional conservatism area, the convergence of IFRS alleviates the information asymmetry between external stakeholders and managers, by improving the disclosure environment and reducing the monitoring costs between the principal and the agent.

Before the IFRS convergence in 2006, the information asymmetry in Chinese stock market was extremely high. The IFRS as public goods can not only improve the comparability of financial reports and

accounting information but also can enhance the firm's information disclosure environment (Beuselinck et al., 2009). As a result, the improved disclosure environment and decreased ex-ante information asymmetry moderate an agent's demands for accounting conservatism.

The IFRS adoption could also alleviate principals' demands for bad-news through reducing the monitoring costs of the principal. If the monitoring costs decline, the principal is more inclined to directly supervise agents' efforts rather than to use incentive agreements (Jayaraman & Shivakumar, 2013). As a result, debtholders are expected to demand less conditional conservatism after China's convergence with the IFRS.

Therefore, IFRS convergence should reduce the conditional conservatism in China's listed firms because of the alleviation of ex-ante information asymmetry and monitoring costs. Given the discussions above, this thesis posits that the implementation of new accounting standards has reduced the degree of conditional conservatism in public companies in China. Moreover, this thesis further examines the moderating effects of four factors in influencing the association between accounting standards change and a firms' conditional conservatism: state ownership of companies; complexity of business model; state ownership of banks; and financial constraints (financial leverage of business) of companies.

As a result, the core inference of this thesis is that: as new Chinese accounting standards are largely convergent with the IFRS, they can be recognized as a set of high-quality and comparable accounting standards; and accounting quality and comparability of the Chinese-listed companies should be improved and the information asymmetry and monitoring costs would therefore be mitigated. This improvement would reduce the demand of shareholders and debtholders for conditional conservatism. In order to verify the above inference, the specific research objectives here are as follows:

1. First of all, the underlying research objective of this thesis is to examine whether the implementation of new Chinese standards makes the listed companies adopt a less conditionally conservative accounting policy.
2. Then, this thesis investigates more deeply whether the implementation of the new standards in China mitigates the information asymmetry and monitoring costs, and thus reduces the demand of shareholders and debtholders for conditional conservatism.
3. Finally, considering that the difference in the ownership structure in China affects the level of demand for conditional conservatism (Chen, 2010), this thesis also investigates whether there is a correlation between cross-sectional differences in conditional conservatism and the kind of ownership structure of public enterprises and banks, i.e. whether the company or bank is a SOE.



In unconditional conservatism area, the impact of the ASBEs can be reflected in the changes in requirements for capitalisation and depreciation and amortization. The new standards allow the development expenditures that meet the conditions of capitalization to be capitalized and accounted as intangible assets, which in turn reduces unconditional conservatism. Companies under the former standards could not depreciate idle fixed assets. However, the new standards in Article 14, ASBE No. 4 no longer allow recognizing idle fixed assets, which in turn increases unconditional conservatism. Since the impact of changes in capitalisation is far less than that in depreciation, this thesis, therefore, posits that the implementation of new accounting standards has increased the degree of unconditional conservatism in public companies in China. Therefore, the specific research objectives of this thesis are as follows:

1. This thesis investigates whether the implementation of the new standard makes the unconditional conservatism of listed companies increase.
2. Then, considering that the state-owned enterprises have more serious idle fixed problems, this thesis also studies whether the unconditional conservatism of state-owned enterprises has been increased to a greater extent.

### **1.3 Research methods**

The research method is mainly quantitative research based on cross-sectional time series regression analysis. The aim of this thesis is to explore how new Chinese ASBEs have affected the conservatism of Chinese public enterprises. The models employed in this thesis include the Accrual cash flow method, which is developed by Ball and Shivarkumar (2005) and used for measuring conditional conservatism, and the book-to-market value (BTM) model, which is mainly developed from the work of Feltham-Ohlson (1995) and used for measuring unconditional conservatism.

#### ***Models for testing conditional conservatism***

For testing conditional conservatism, the accrual cash flow model is the main method employed in this thesis. The doubt over the efficiency of China's share market means that simply relying on Basu's (1997) model, which assumes market efficiency, is not sufficient. To avoid this problem, this study tests accounting conservatism by mainly observing the relationship between operating cash flows and accruals in financial statements with the accrual cash flow measurement method proposed by Ball and Shivarkumar (2005). However, given that Basu's work (1997) is widely recognised and extensively used for measuring conditional conservatism, the conditional conservatism measurement method developed by Basu (1997) is used as a supplementary measurement method.

Moreover, the supplementary empirical models for testing conditional conservatism are derived from the work of Basu (1997), who has proposed a set of measurement models for accounting conservatism based on the differences in the timeliness with which share markets react to bad and good earnings news. Givoly et al. (2007) refer to Basu's (1997) measurement models for accounting conservatism differential timeliness measures, which have been employed by Watts (2003) to empirically test accounting conservatism. Deriving from Basu (1997) and Watts (2003), there are two measurement methods often used for measuring conditional accounting conservatism: the earnings share return measurement method and the earnings accruals measurement method. However, given the fact that the shares of many listed companies in China do not fully circulate in the market, many factors unrelated to conservatism may affect the ability of share price in reflecting publicly available news information. This means that the earnings share return measurement method may not be applicable to the Chinese market. Furthermore, Basu's (1997) method and accruals measurement method are very similar to each other. Therefore, Basu's (1997) methods are used as supplementary tests of conditional conservatism with an understanding of their limitations when applied to the Chinese share market, and also to increase comparability with extant research on accounting conservatism in China.

#### ***Models for testing unconditional conservatism***

The main model used for testing unconditional conservatism in this study is the book-to-market value (BTM) model developed by Beaver and Ryan (2000), which measures unconditional conservatism based on the book-to-market value ratio of the equity. It is worth noting that the effectiveness of the BTM model for measuring unconditional conservatism depends on the efficiency of the capital market, i.e. the degree to which information is readily available to investors, since market efficiency affects the market value of the equity. Given that the efficiency of China's share market is questioned by many researchers (Thiele, 2014; Beltratti et al., 2014; Wen et al., 2010; Chang and Ren, 2014), the accuracy of the market value of net assets in Chinese-listed companies may be limited. This is likely to be one of the major limitations of this study. However, due to the lack of other better alternatives to test unconditional conservatism, the book-to-market value (BTM) model is still employed.

All related data in the methods employed in this thesis is collected from the CSMAR database (China Securities Markets and Accounting Research Database). In order to ensure the ultimate ownership information, this thesis additionally verifies validity of the data using the WIND database, which is also widely used by both academic scholars and analysts in China. The initial sample includes entire public companies in Shanghai or Shenzhen stock exchange from 2001 to 2010, which is collected from the CSMAR. The final sample for conditional conservatism consists of 11,909 firm-year observations and the

sample for unconditional conservatism includes 6,776 firm-year observations.

## 1.4 Statements of gap and contributions to knowledge

### *Improved understanding of conditional conservatism in China in the absence of the efficient market assumption*

Most of the empirical studies regarding conditional accounting conservatism in China to date have relied on the conservatism measurement models of Basu (1997) by evaluating the asymmetric timeliness of losses and gains recognition, including the earnings persistence measurement model (Kung et al., 2008), the earnings share return measurement model (Cullinan et al., 2012) and the K-W model (Khan and Watts, 2009). Especially noteworthy here is that the conservatism measurement models proposed by Basu (1997) are based on the efficient market assumption. The theoretical rationale behind the conservatism measurement models proposed by Basu (1997) is that bad and good news is reflected symmetrically and in a timely manner in efficient markets through share returns. However, the higher timeliness of recognising bad earnings news reflects the existence of conservatism in financial reporting practices (Basu, 1997). Therefore, all conservatism measurement models proposed by Basu (1997) rely on the underlying assumption that share returns in an efficient market can efficiently reflect all publicly available ‘news’.

While most of the empirical studies regarding conditional accounting conservatism in China to date have relied on Basu’s conservatism measurement models (1997) and, in turn, Basu’s (1997) assumption of efficient market, the efficiency of the Chinese share market is questioned by many academics. Groenewold (2004), for example, concludes that the Chinese share market is, to a large extent, inefficient or low-efficient. A number of studies (such as, Laurence et al., 1997; Liu et al., 1997; Long et al., 1999; Lima and Tabak, 2004) conducted before the introduction of the ASBEs have proved that the share market in China is weak-form efficient, meaning that share returns do not incorporate all publicly available information. On the other hand, later studies such as Chong et al. (2011) and Lim and Brooks (2009) have suggested that the efficiency of the share market in China has increased since 2006. Despite this improvement, most researchers agree that the efficiency of the share market in China is generally less than stock markets in countries with more developed financial systems. In light of the relative inefficiency of the Chinese share market, using Basu’s share return-based measurement methods of accounting conservatism (1997) risks producing misleading and inaccurate results about conservatism of Chinese-listed companies. Therefore, there exists an empirical gap in extant research regarding the impact of IFRS convergence on conditional conservatism.

Therefore, the first contribution of this thesis is the improved understanding of conditional conservatism in China without relying on the efficient market assumption. To avoid the issues caused by the doubt over the efficiency of the share market in China, the accrual cash flow measurement method of accounting conservatism developed by Ball and Shivarkumar (2005) will be employed, rather than the earnings share return measurement models proposed by Basu (1997) as in many previous similar studies. By using this model, this thesis will test for conditional conservatism through the asymmetric influence on regression coefficients of accruals related to good and bad earnings news in companies' financial statements, rather than share returns, thus avoiding the ambiguity over the efficiency of the share market in China. As a result, this thesis will contribute to the existing body of knowledge with a more theoretically-sound methodology, which is unfettered by the efficiency of the Chinese share market, although Basu's (1997) models will still be used as a complementary test for comparison.

### ***Fresh insights into unconditional conservatism in China after the implementation of the ASBEs***

Conditional conservatism is a phenomenon where companies more timely recognize losses caused by 'bad news' than gains caused by 'good news'. By contrast, unconditional conservatism means that companies at the initial recognition of liabilities or assets adopt accounting treatment methods to defer revenue recognition or accelerate expense recognition. Most of the research to date regarding the conservatism of Chinese public companies concerns only conditional conservatism, which is reflected in the differences in the timeliness with which 'bad' earnings news and 'good' earnings news is recognised (e.g. Cullian et al, 2012; Lin and Tian, 2012; Kund et al, 2008, etc.). However, by examining the differences between the ASBEs introduced in 2006 and the previous Chinese standards, it is evident that the fundamental changes ushered in by the ASBEs are likely to affect the unconditional conservatism of Chinese public enterprises.

For example, in accounting for the asset value of investment property, ASBE 3 stipulates that the fair value measurement model should be used if the investment property can be determined by the fair value method reliably, in which case no depreciation or amortisation is needed in the future. There is a fundamental difference in the PRC GAAP, the previous standards in China, which considered investment properties as fixed or long-term assets subject to depreciation or amortisation. Apparently, this change is likely to decline the level of unconditional conservatism of Chinese public firms. Moreover, the ASBEs revised standards regarding capitalisation and depreciation and amortisation. In the PRC GAAP, companies did not depreciate idle fixed assets and could not use accelerated depreciation methods. However, Article 14, ASBE No. 4 states that enterprises shall depreciate all fixed assets and allow accelerated depreciation method, which is obviously to increase the degree of unconditional conservatism.

These changes in the ASBEs regarding the recognition of assets and liabilities are likely to result in a higher or lower level of unconditional conservatism of Chinese-listed enterprises. For example, the elimination of recognition of idle fixed assets under former standards and the introduction of accelerated depreciation methods will strengthen unconditional conservatism. In this regard, by exploring the degree of unconditional conservatism of Chinese public enterprises following the ASBEs, this thesis will provide fresh insights into how the degree of unconditional conservatism is impacted by the new standards.

## **1.5 Thesis structure**

This section briefly introduces the structure of this thesis. Chapter Two focuses on the literature review and discusses various definitions of conservatism, accounting standard setters' perspective on conservatism, relevant empirical studies, and, more importantly, the distinction between conditional and unconditional conservatism, looking at their similarities and differences. The literature review also discusses the motivation and demand for conservatism in the Chinese context. Importantly, a set of relationship maps of relevant stakeholders that prompts the use of conservative accounting practices is developed in this chapter. It offers an overview of the relevant stakeholders who impact the decision to take conservative accounting practices in China. In order to study further the influencing factors of IFRS convergence on the demand for conservatism, the literature review also establishes a causal diagram for Chinese IFRS convergence on conservatism.

Chapter Three discusses the application of conservatism methods in China. This chapter critically discusses the existing conservatism measurement models that are appropriate in China, based on the review of various measurement methods of accounting conservatism.

Chapter Four develops the hypotheses for conditional and unconditional conservatism. Then, Chapter Five outlines the conditional and unconditional conservatism measurement methods. Based on analyses in Chapter Three, the accrual-cash flow method and the BTM method are baseline models for measuring conditional and conditional conservatism, respectively. Moreover, Basu's (1997) method and Qing's (2007) method are used for the robustness test. Chapter Six describes the sample and the data. Chapter Seven and Eight present results and analyses for conditional and unconditional conservatism, respectively. Finally, Chapter Nine presents a summary of the findings and limitations.

# Chapter Two: Literature review

## 2.1 Relevant definitions of conservatism

Conservatism is a non-negligible characteristic of financial statements and an important principle in measurement and recognition. Basu's study (1997) demonstrated that the conservatism is a phenomenon which has existed in accounting practice for over 500 years. The concept of conservatism can be traced back to the medieval era. Traders as early as the 14th century began to calculate the value of their inventories using the Lower-of-cost-or-market rule (LCM hereafter). LCM is an accounting method used at the end of the fiscal year where the value of the ending inventory should be based on the comparison between the cost and market price. If the inventory price in the market is below its cost, the inventory cost should be accounted according to its market value. Otherwise, if the cost of inventory is below the market price, the cost of the inventory should be accounted according to the cost at which it was purchased. LCM is a revision of the historical cost principle. The LCM rule was introduced into practice and book in the 17th century, and later incorporated into commercial law. The LCM principle can be seen as an early example of conservatism.

Conservatism has long been regarded as the most fundamental accounting principle in valuation (Sterling, 1970). At the beginning of the 20th century, conservatism was believed to be a dominant principle and should be considered first provided it conflicts with other accounting principles (Chatfield, 1974). However, the Statement of Financial Accounting Concepts No. 2 (SFAC2) developed by the US Financial Accounting Standards Board (FASB) stated that conservatism principles are not always more important than other main principles.

Chinese Ministry of Finance in 1985 promulgated "The Accounting Regulations of the People's Republic of China for the Joint Ventures Using Chinese and Foreign Investment", which introduced the principle of conservatism into the accounting standards (Wang, et al, 2009). The introduction of the conservatism principle is regarded as the beginning of Chinese accounting standards to converge with international standards.

### 2.1.1 Conservatism defined by accounting standard-setting bodies

A precise definition is essential for discussing the merits of conservatism. However, the definition of conservatism varies across academic and policy debates. Even though conservatism has an essential function in accounting theory and practice, it has different definitions in different countries and regions.

As a result, various standard-setting bodies around the world have different interpretations and definitions for conservatism.

The US Accounting Principles Board (APB) first regarded the conservatism principle as a primary qualitative feature which makes accounting information useful, declaring that “managers, investors, and accountants have generally preferred that possible errors in measurement be in the direction of understatement rather than overstatement of net income and net assets” (APB, 1970, para. 171). This definition intuitively leads to the impression that conservatism leaves accounting valuations off firm’s real value. If investors fully accept the firm's valuation recognized by the accounting report, financial conservatism will reduce the value relevance and in turn mislead investors in their investment and management decisions. After that, the Financial Accounting Standards Board (FASB is the organization to replace APB in 1973) realized that the principle of conservatism did not mean blindly underestimating income and assets. Under the old principle of conservatism developed by the APB, firms could deliberately understate the value of assets. The FASB emphasizes that the conservative accounting information does not mean that firms can deliberately and consistently understate net incomes and assets. The definition developed by the APB may lead to the abuse of the principle of conservatism. This potential issue may decline the quality of financial reports and accounting information, resulting in failure to prepare "true and fair" financial statements.

Moreover, the International Accounting Standards Board (IASB) introduced "Prudence (Conservatism)" into the Conceptual Framework as a basic principle in financial reporting, declaring that “the inclusion of a degree of caution in the exercise of the judgments needed in making the estimates required under conditions of uncertainty, such that assets or income are not overstated and liabilities or expenses are not understated” (IASB, 1989, para. 38). The IASB draws on the FASB’s experience and related research and emphasizes that conservatism does not mean an artificial undervaluation of incomes and assets, or overstatement of liabilities and costs. IASB (2010) excluded conservatism from qualitative characteristics in the Conceptual Framework, placing more emphasis on the disclosure of fair value by accounting information systems. However, conservatism was reintroduced into the new Conceptual Framework of 2018, and the IASB emphasizes that “Neutrality is supported by the exercise of prudence. Prudence is the exercise of caution when making judgments under conditions of uncertainty...” (IASB, 2018, para. 2.16). Since then, conservatism (Prudence) is no longer an independent principle in the new Conceptual Framework of 2018.

According to the Basic Standard in the ASBE in China, a company should maintain prudent accounting

principles and should not overestimate income and assets, or undervalue costs and liabilities. However, this view has already been challenged. FASB, in the SFAC2 (1980, para. 95) pointed out that when applying the principle of conservatism, financial reports should not include deliberate or inconsistent underestimations of profits and net assets, but should be based on cautious judgment of uncertainty, and aim to guarantee that the risk in the business environment is deliberated carefully. Therefore, when the multiple estimated cash flows are equally likely in the future, the more cautious one should be recorded under the principle of accounting conservatism. However, when the possibility of multiple estimated cash flows is different in the future, companies should not blindly adopt a more conservative estimate. In the Conceptual Framework of 2010, the IASB also holds a similar view.

In general, standard-setting bodies have recognized that "accounting conservatism" is related to uncertainties. When accounting conservatism is applied, there are often "measurement errors" or "conscious bias". Due to the influence of behaviourism, standard-setters have shifted research perspectives to the motives of these acts, and defined accounting conservatism based on the motivation driving accounting choices. For example, in British and American cultural context, the secret reserve of the company is in conflict with personal property. In Germany and other civil law countries before 2005, however, this was not the case. These different perspectives on accounting conservatism make it difficult for standard-setting bodies to establish a uniform and accurate definition of accounting conservatism across different countries. With the continuous development of equity capital markets, standard-setting bodies are more concerned about the function of accounting information to equity investors (Watts, 2003). Policymakers have considered conservatism as potentially reducing the value relevance or exacerbating information asymmetry.

### **2.1.2 Conservatism defined by empirical studies**

The conservatism is defined as underestimating the value of enterprises, which does not only appear in the implications of accounting textbooks or accounting standards but also in academic studies. Since accounting standard-setting bodies have varying definitions of accounting conservatism, they cannot be used directly for guiding the development of the measurement models in the empirical research. Instead, scholars provided more specific and verifiable definitions, as well as measurement models employed to determine the level of conservatism. While there are disparities in the specific forms of "the bias", as long as net assets or net profits are undervalued, accounting information is considered to be conservative.

Conservatism is *not* a new accounting concept. For example, the statement by Bliss (1924) suggests accounting conservatism is classic but more radical. However, this definition does not consider the effects



of accounting earnings staging, and therefore, it has not been widely promoted. Paton (1948) pointed out that conservatism refers to the efforts of accounting personnel to underestimate net assets or net income through a variety of possible ways. Watts and Zimmerman (1986) argued that conservatism can be defined as the effort by accountants to report the lower price in all valuations of relative assets, higher prices in all valuations of debt, and the accounting practice of recognizing costs before revenue.

Feltham and Ohlson (1995) believed that, when the book value of net assets is less than the market value, accounting conservatism might apply. This definition of accounting conservatism makes market-book ratio an index for accounting conservatism. Then in 1997, conservatism was redefined by Basu in accounting research. He provided the most recognized definition, expressing conservatism as the accountants' tendency to more rigorously verify "good news" compared to "bad news". "Bad news" refers to the items of negative economic benefits while "good news" refers to the items of positive economic benefits. Thus, the effects of "bad news" are recorded in a timelier manner, while the effects of "good news" are recorded gradually.

Basu's (1997) definition assumes that a company's accounting system processes a firm's information flow news-by-news. The principle of conservatism is evidenced in the accounting system's asymmetric attitude towards different input news. For good news, accounting systems need more stringent verification conditions. While for bad news, accounting systems increase the timeliness of information disclosure. Therefore, the definition of conservatism in the research of Basu (1997) is conditional on the nature of news, which is classified as the conditional conservatism by later studies.

Basu (1997) enriches the understanding of conservatism by studying in depth the procedure of the conservative accounting information processing. First, conservatism means that the accounting information processor needs extra effort when it comes to handling good news about the company's operations. The underlying logic is that the manager of the company has the incentive to overstate the earnings of the company<sup>1</sup>. Therefore, conservatism would not underestimate the value of the entity but instead, act as a means of corporate governance by correcting the manager's biases in overestimating the firm's value. In other words, conditional conservatism would increase the value relevance.

The second point inspired by Basu (1997) is that conditional conservative accounting discloses the company's bad news in a more timely manner, which increases the timeliness and value relevance of

---

<sup>1</sup> Manager's overstatement motivations include manager career considerations, imperfect manager compensation mechanisms, use of stock options in manager compensation, and personal ambitions of establishing corporate empire, as discussed by Jensen and Meckling (1976) and Watts (2003)

when bad news occurs. Bad news is more relevant information for both creditors and equity investors due to their asymmetric payoff utility. The creditors focus more on the solvency of the company or the downward risk of operating performance. Equity investors, though theoretically able to diversify their risk, also need to keep abreast of bad news to deter managers from investing in negative NPV projects.

Another more recent academic example comes from Jiang and Yang (2016), who interpreted conservatism as a firm's disclosing strategy on the summary statistics of its fundamental performance by merely signaling the bottom limit of the firm's performance. Jiang and Yang (2016) suggested that financial statement users can learn the entire statistical distribution of a firm's performance from the disclosed bottom limit of value-added.

## **2.2 Conservatism classification**

The book value of a firm disclosed by accounting usually falls below its value in the stock market (Watts, 2003). Scholars explain this phenomenon by redefining conservatism or related mechanisms. According to their influences, theoretical studies (Ball & Shivakumar, 2005; Beaver & Ryan, 2005) divide conservatism into conditional and unconditional conservatism.

### **2.2.1 Conditional conservatism**

Conditional conservatism arises from the inconsistent recognition speed of negative and positive economic news, which is manifested in the fact that the negative economic news is more timely recognized in accounting earnings compared to the positive economic news. In empirical research, "bad news" is usually defined as the economic news resulting in losses; "good news" is usually defined as the economic news resulting in earnings. As a result, the nature of events directly affects the speed at which earnings or losses are recognized. Conditional conservatism in some studies is also called news-dependent conservatism (Chandra, 2004), ex-post conservatism (Richardson & Tinaikar, 2004; Pope & Walker, 1999) or income statement conservatism (Ball et al, 2000; Pae et al, 2005). If companies' accounting policies are conditionally conservative, losses caused by "bad news" are confirmed timely through the impairment of assets, whereas earnings caused by "good news" are not confirmed immediately in the book value of assets but recognized over time. In the empirical study of Basu (1997), positive and negative share returns can be employed to capture "good news" and "bad news", respectively. He proved that "bad news" is recognized in a more timely fashion, but "good news" is more persistent in the future. Since the timely recognition of losses in conditional conservatism alleviates the agency costs, the effectiveness of compensation and debt contract will be improved (Ball & Shivakumar, 2005). The examples of conservatism principles, which those new to accounting are most likely to learn first, are the impairment

of assets, provisions, the lower-of-cost-or-market model, and so on.

### **2.2.2 Unconditional conservatism**

This type of conservatism is related to the under-recognition of net accounting assets through conservative accounting treatment methods. Unconditional conservatism means that the accounting system will defer confirming earnings or accelerate confirming expenses at the initial recognition of liabilities or assets, which leads to higher market value of the company than its book value. Therefore, unconditional conservatism can help to explain the permanent difference between the net assets of a company measured in accounting terms and the market value of the enterprises' shares. Unconditional conservatism in some studies is also called news-independent conservatism (Chandra, 2004), balance sheet conservatism (Pae et al, 2005), or ex-ante conservatism (Richardson & Tinaikar, 2004). The accounting treatment methods in unconditional conservatism remain consistent in the changing business environment in the future, once the valuation methods are adopted at the initial recognition (Watts, 2003). Unconditional conservatism implies that to some extent "bad news" in the future has been predicted and confirmed, since accelerated expenses recognition, which is employed as a preventive measure to confirm losses before the "bad news" happens, and the conservative method have been adopted at the initial recognition. A typical case is the expensing of R&D costs rather than capitalization. Other examples of unconditional conservatism consist of the accelerated depreciation method, expensing advertising costs, historical cost method, and LIFO method if prices are reducing (Watts, 2003).

Accounting scholars pay much less attention to unconditional conservatism than conditional conservatism. According to statistics by Ruch and Taylor (2015), of the 34 studies reviewed in their research, 24 concern conditional conservatism. On the one hand, there is not enough theory supporting the advantages of unconditional conservatism. On the other hand, scholars implicitly recognize that unconditional conservatism will reduce the earnings quality, due to the persistent bias generated at the initial recognition of assets.

### **2.2.3 Similarities and differences**

Unconditional and conditional conservatism may interact with each other in function. In many ways, the function of unconditional conservatism is line with conditional conservatism, such as minimizing the economic uncertainty and litigation costs, counteracting the conflict caused by information asymmetry, reducing tax costs, and averting criticism for short of monitor (Watts, 2003). In fact, both kinds of conservatism will cause undervaluation of the book value of companies.

However, there are also some important differences. Unconditional conservatism utilizes only information known at the inception of the asset's life, whereas conditional conservatism will be affected by future information. In addition, these two kinds of conservatism have different focuses: the former is more focused on the difficulty of confirming accounting information and the effect of such recognitions on earnings in the future; whereas the latter is more concerned with the elimination of earnings manipulation in cases when managers have a motivation to overvalue earnings to improve the enterprises' performance and gain rewards under the compensation contract. The key difference between conditional and unconditional conservatism is that former can offer new information to improve the contract effectiveness. In addition, it is worth pointing out that most of the extant research only focuses on one of these types and rarely studies the interaction term between them.

Beaver and Ryan (2005) showed that there is no definite correlation between unconditional and conditional conservatism. Qiang (2007) in his empirical research examined four motivations of conservatism: contract, taxation, litigation, and regulation, while conservatism was separated into unconditional and conditional conservatism. Qiang's study (2007) supported that contract motivation generates demands for conditional conservatism; litigation motivation generates demands for both unconditional and conditional conservatism; and regulation and taxation motivation are related to unconditional conservatism. Qiang's results (2007) demonstrated that both kinds of conservatism have distinct functions in regulation, taxation and contract, however they have similar function in litigations. Moreover, he indicated that unconditional conservatism is negatively related to conditional conservatism, since unconditional conservatism can even curb the use of conditional conservatism. He believed that the undervaluation at initial recognition of assets (unconditional conservatism) offsets the recognition of losses related to "bad news" at the subsequent recognition of assets. As a result, there is a negative correlation between conditional and unconditional conservatism, and different demands can be met by the two forms of conservatism.

Lafond and Watts (2008) believed that users of financial reports do not merely accept earnings as a measure of company value. They emphasized the interaction of accounting information with other sources (such as analyst forecasts) throughout the company's information disclosure environment. Specifically, accounting information serves as "hard" information subject to rigorous audits and could discipline other information sources such as analyst forecasts. As a result, the financial statement users will still benefit from the accounting information disclosure even though the accounting information per se diverges from the actual value of the company since it improves the overall information environment of the company.

This argument, in fact, weighs more upon the reliability of accounting information compared to relevance or timeliness. According to this argument, both forms of conservatism are valuable to users of financial reports.

Depending on the results of various academic studies, it can be found that conditional conservatism is in fact principle-oriented, which allows managers to have greater autonomy in making discretionary accounting policy decisions. By comparison, unconditional conservatism does not provide sufficient discretionary accounting decision space for firms' managers due to the strict restrictions on accounting standards. Therefore, unconditional conservatism is generally considered to be rule-oriented (Beaver and Ryan, 2005).

## **2.3 Conservatism motivations and demands of China's listed companies for conservatism**

Extant literature has demonstrated a wide spread and long-term existence of accounting conservatism, which shows that there must be an inherent economic mechanism that justifies the existence and development of this accounting practice. Watts (2003) summarized significant empirical evidence and provided four causes of accounting conservatism: contracts, litigation, regulation and taxation. This thesis will also analyse the demand of China's listed companies for conservatism in terms of these four causes.

### **2.3.1 Contract motivation**

Watts (1993) believed that debt and compensation contracts are the primary reason for the demand for conservatism. Based on contract theory, an enterprise is a combination of a series of contracts (Jensen & Meckling, 1976). Differences in contractual arrangements may lead to different opportunistic behaviour of contract parties, and the value of the firm will be declined by this opportunistic behaviour. The cost generated by this opportunistic behaviour is defined as the contract cost in contract theory. In a market that is reasonably predictable, the principal party need to bear the entire contract costs generated by this opportunistic behaviour, which gives them the motivation to restrict opportunistic behaviour. On the whole, the principal has less information than the agents, and this information asymmetry may cause agency issues, such as "moral hazard" or "adverse selection" (Watts, 2003; Hart, 1991). The opportunistic behaviours of agents can be anticipated and restricted by rational principals through contracts (Grossman & Hart, 1986). It is worth noting that this mechanism is costly in implementing, since managements may produce sub-optimal decisions in certain situations if the freedom of managers to make decisions is limited (Myers, 1977). Thus, minimizing the contract costs is the main goal in the contract design in order

to maximize the enterprise value. Watts (2003) pointed out that contracts include not only formal contracts, including management personnel compensation contracts and debt contracts, but also informal contractual arrangements including articles of association and rules, enterprise control systems, etc. Accounting data is used for various types of contracts and accounting has a major function in setting contractual terms and monitoring the implementation of these clauses. In this case, accounting as an internal mechanism can help each participant of the contract to reduce agency costs through accounting information (Agency costs mainly comprise monitoring cost, bonding cost and residual loss), thereby increasing the value of companies. This generates the need for the verifiability and timeliness of accounting information (Dechow et al, 1998). Watts (2003) pointed out that the contract is the initial source of accounting conservatism. Conservative accounting information can reduce adverse selection and moral hazard generated from limited term of office, limited liability, asymmetric pay, and information asymmetry. Therefore, conservative accounting information can decline the possibility of managers infringing creditors and shareholders' interests (Watts, 2003).

On the whole, each participant in the enterprise utilizes accounting information to alleviate agency costs, thereby increasing the overall value of the company. This creates the need for timely and verifiable accounting information. Conservatism is actually an asymmetry of timeliness and verifiability. The demand for conservatism stems from the asymmetric benefits of the parties in the contract. The following information will be divided into two parts for specific analysis.

### ***Contract between shareholders and creditors (debt contract)***

In debt contracts, accounting conservatism protects the interests of creditors in three ways: first, accounting conservatism restricts overpayment to shareholders and reduces the possibility of shareholders gaining profits at the expense of creditors' losses (Narayanan and Burkart, 2005). Second, accounting conservatism confirms economic losses in a more timely manner. When bad news occurs, the creditors are informed more promptly, which can protect their rights and interests effectively and more quickly (Zhang, 2007). Third, accounting conservatism restrains the opportunistic behaviours of managers (Watts, 2003).

To return to the first, accounting conservatism restricts overpayment from debt companies to shareholders. The *principal agent theory* explains the existence of agency conflicts between creditors and shareholders (Ahmed et al, 2002). Managers and shareholders may deprive the creditor's wealth. When the company experiences financial difficulties, this agent conflict is particularly serious. For example, excessive

dividends to shareholders, debt overhang, asset conversion, etc., will result in the transfer of creditors' wealth to shareholders, thereby increasing creditors' default risk. The *effective contract theory* holds that the reduction of conflicts between the principal and the agent is in the best interest of all participants. The debt contract is designed to reduce agency costs between companies and creditors. To reduce the conflict of dividend policy between companies and creditors, the debt contract usually limits the dividend policy, including direct and indirect restrictions. Accounting conservatism is an indirect restriction on dividend policy. Conservative accounting results in lower cumulative returns, retained earnings, and corporate assets, which limits the dividend payment and to a certain extent, reduces the possibility of companies paying excess dividends to shareholders.

Ahmed et al (2002) found that the degree of conservatism is improved as the conflict between creditors and shareholders become more serious. In the serious conflict between creditors and shareholders, the conservatism has more major function in reducing excessive dividends. Accounting conservatism can restrict the payment of dividends to shareholders, suppress the managers (or shareholders) overestimating assets and profits, and decline the possibility of managers implementing negative net present value (NPV) project by using creditors' funds to pay dividends to shareholders, and overestimating earnings and assets. These benefits of accounting conservatism help to shield the interests of creditors and alleviate the interest conflict between the creditors and shareholders. When managers choose conservative accounting, the credit rating is higher because the conservatism reduces the creditors' risk. The study by Ahmed et al (2002) thus provided evidence suggesting that debt contract is the major reason for the existence of accounting conservatism, as it can alleviate the conflict between creditors and shareholders, decrease the cost of debt, as well as increase the value of the enterprise.

Second, conservative accounting has accelerated the timely recognition of economic losses and timely protection of creditors' interests. In the debt contract between the creditors and companies, creditors can only withdraw the interest and principal, provided that the business performance of companies is great, but they may not take back their principal providing the company goes bankrupt. Due to this asymmetric return, the minimum value of firms is especially important to creditors. Zhang (2007) discussed the correlation between conservatism and post default rate. His research stated that accounting conservatism supplies a timely indicator to the creditors that companies may be in breach of contract, which helps the creditors to make favourable decisions. Since accounting conservatism reduces creditors' risk, creditors prefer to obtain lower levels of interest rates. Therefore, conservatism is beneficial to both creditors and debtors. Watts (1993) also found that accounting conservatism could delay payments to shareholders, which is conducive to the protection of creditors' interests. At the same time, conservatism also helps

companies postpone payments to tax authorities and managements, which guards the interests of shareholders.

Third, accounting conservatism suppresses managers' opportunistic behaviours. Watts (2003) believed that the lack of restrictions on management's opportunistic conduct will lead to major deviations in financial reporting. Because managers tend to overestimate accounting income and net assets, the asymmetrical recognition of gains and losses offsets this bias by managers to some extent.

In short, satisfying the demand of creditors for conservatism not only benefits creditors but also benefits all participants in a contract. Accounting conservatism alleviates the agency conflict between creditors and shareholders, thereby reducing agency costs and increasing corporate value. This increased corporate value will be shared among all corporate-related stakeholders, thereby increasing each stakeholder's interests.

### ***The demand of China's listed companies for contracts between shareholders and creditors***

Much literature concerning the application of conservatism in China examines the impact of the debt and the nature of ownership on accounting conservatism, and it is generally believed that the shareholders have a more intense influence on the enterprise information than the creditors.

Using data from China's listed companies, Sun et al. (2005) found enterprises with the increased ratio of debt in their capital structure employ more conservative accounting practices than those with the low proportion of debt. However, Sun et al. (2005) noted that for the state-controlled enterprises, the effect of debt in influencing the degree of accounting conservatism was significantly smaller. Using data from a sample of high-tech enterprises in Zhongguancun (similar to the US Silicon Valley), Zhang et al (2003) found that the gearing ratio of private enterprises is a major factor in their bankruptcy, which is not the case for state-owned enterprises. This means that the constraints of debt are weaker for China's state-owned enterprises than for private companies. Therefore, the debt contract under these circumstances is unlikely to create an intense demand for conservative accounting information in China's state-owned enterprises.

Zhu and Chen (2006) found that when the proportion of bank loans in their borrowings is low, the accounting conservatism of private listed enterprises is more significant compared to that of



state-controlled listed enterprises. However, as the proportion of bank loans increases, the accounting conservatism of private listed companies is not obviously different from that of state-controlled listed enterprises. The findings of this research illustrate that the correlation between the proportions of bank loans in a company's borrowings has a major effect on the conservatism of the public company's accounting information. Zhu and Chen (2006) found evidence suggesting that commercial banks in China have lower requirements for the accounting conservatism of state-owned enterprises. They believed that commercial banks' lower requirement on the conservatism of China's state-owned enterprises is primarily due to China's special property rights. In particular, a "quasi-debt" relationship exists between state-owned commercial banks and state-owned enterprises, as they are both owned by the state. This "quasi-debt" relationship weakens the commercial banks' demand for the accounting conservatism of state-owned enterprises. ("Quasi-debt" is a kind of debt in which the creditor is also the owner of a company.)

### ***Contract between shareholders and management (compensation contract)***

In the compensation contract, conservatism is often utilized to limit opportunistic and over optimistic tendencies of management. Since management under an earnings-based compensation contract may blindly increase the size of the business to build a business empire, their interests may be inconsistent with the interests of shareholders. Because of asymmetric information, inconsistent interests between managers, shareholders and incomplete contracts, Watts (2003) found that managers may hide loss projects and only report profitable projects. Conservative financial reports are conducive to investors reducing managers' over-optimistic tendencies, and to identifying loss-making projects early, which can shield shareholders' interest and increase firms' value.

Managers are motivated to recognise economic gains early and defer their recognition of economic losses. First, when managers' compensation is calculated and distributed on the basis of accounting income, managers may overestimate current accounting income and future cash flows. Second, managers may implement certain negative NPV (net present value) projects to meet their own prerequisite consumption (on-the-job expenditures), such as managers blindly expanding business in order to establish a corporate empire. Although these projects will eventually have an adverse effect on the enterprise, managers may, through delayed confirmation of economic losses, delay the adverse impact on the company until the end of their management period.

Managers have the ability to confirm economic gains earlier and confirm economic losses later. Managers

have more private information regarding the company than other business participants (shareholders and debt holders). Managers can release information on economic gains in a timely manner or delay information on economic losses, but other groups and even auditors cannot directly observe this private information. It can be accomplished in two ways. First, managers can directly relax the recognition criteria for economic gains and tighten the recognition criteria for economic losses, which is reflected in financial reports where economic gains are confirmed in a timely manner and economic losses are confirmed in a delayed manner. Because only the management has this private information, other groups cannot judge whether it is reasonable. Second, managers directly convert unrealized economic gains into realized gains by selling assets or delaying the sale of assets that have suffered losses.

### ***The demand of Chinese-listed companies for contracts between shareholders and management***

The ownership structure of a business can be divided into the Anglo-Saxon corporate structure based on the separated ownership, and the centralized structure represented by Asian and European firms. As mentioned earlier, the agency costs mainly arise from the opportunistic tendency of managers in the process of implementing a contract of managers to investors. Under different ownership structure, this conflict can be resolved in different ways. Shares or equity of Anglo-Saxon companies are decentralized, resulting in the need for conservative accounting information. Ashbaugh-Skaife et al. (2005) found that the more centralized the equity of a company, the less conservative its accounting policies will be; when the equity of a company is more dispersed, the conservatism is higher because private communication is a means of information transmission.

However, the United States has built a comprehensive regulatory system and market system in contrast to many other countries, which requires the presence of major shareholders (substantial shareholders) who can strengthen the supervision of management, thereby protecting the interests of investors. Gorton and Schmid (2000) found that presence of major shareholders in German banks can significantly improve the operating performance of companies. The strengthening of control by the management of companies due to a substantial shareholders' presence can directly reduce the reliance on accounting information. Therefore, it will result in lesser demand within these listed companies for conservatism.

To protect the state-owned assets, shares of public firms on Chinese capital markets can be classified into the state-owned shares, tradable shares, and legal person shares. The Chinese government has restricted the transfer of shares other than the tradable shares. In general, the level of share concentration in China is

extremely high. Provided that the decentralized (or dispersed) ownership is defined by a listed firm without any shareholder (substantial shareholder) who hold more than 10% of the total shares, only 1.28 % of Chinese public firms met the definition of dispersed ownership by the end of 2006 (Yu, 2008). On average, the shareholding ratio by the largest shareholder in Chinese public firms was 36.47% (Yu, 2008). By the end of 2006, the public enterprises with the largest shareholders holding over 30% of total shares account for 58.68% of Chinese public firms, and the public enterprises with largest shareholders holding over 50% of total shares account for 21.69% of Chinese public firms (Yu, 2008). Thus, most of the substantial shareholders (major shareholders) in Chinese-listed firms have the ability to affect the firms' management. Liu et al. (2003) found that the Chinese government directly or indirectly control 84% of the listed firms eventually, of which the Chinese government directly control 8.5% of the listed firms and indirectly control 75.6% of the listed firms by the pyramid holding model. From the actual nature of controlling shareholders, most Chinese public enterprises are controlled by the government in direct and indirect ways.

Obviously, due to the status of state-owned shares and the centralized ownership, Chinese public enterprises resolving the conflict between participants in the compensation contract cannot entirely depend on public disclosure like in the United States. In contrast, substantial shareholders can directly affect or even control managers to alleviate asymmetric information. Thus, the structure of ownership leads many shareholders in China to have lesser motivation than in the United States against opportunistic behaviour of management through conservative accounting.

Although the controlling shareholder may directly participate in the reduction of the conflict in the compensation contract, it will create new issues: controlling shareholders (or substantial shareholders) may deprive and seize the interests of minority shareholders, especially in the case of insufficient legal protection for investors. Due to the separation of cash flow rights and control rights caused by the pyramid structure in firms or groups, substantial shareholders may tunnel the interests of minority shareholders through the dividend payments, the transfer of assets and other ways (Johnson et al., 2000). In addition, Claessens et al. (2000) found that pyramid ownership structure and cross-holdings are very common in Asian markets. The controlling shareholders in these ownership structures can utilize little capital expenditure to obtain a lot of control rights, which lead to more serious "tunnelling" (substantial shareholders seize the interests of minority shareholders). This phenomenon is also supported by the study by Fan & Wong (2002), they found that with the increasing degree of separation of control rights and cash flow rights, the firms' accounting transparency in East Asia is worse. Fan & Wong (2002) also believed that the higher separation degree will not only lead to a higher possibility of encroaching on the

interests of minority shareholders, but will also help major shareholders encroach and hide the encroachment by manipulating accounting, leading to a decline in accounting transparency. In addition, evidence from Ahorony et al. (2005) also illustrated that the substantial shareholders of Initial Public Offerings companies (IPO companies) have a tendency of "tunnelling" through earnings management (such as, related party transactions). Chen et al (2003) also considered that "tunnelling" is very serious in Chinese-listed firms. Therefore, the minority shareholders have an intense demand for conservative accounting information against the "tunnelling" behaviour of controlling shareholders. However, because of the lack of real control rights and an imperfect legal system, minority shareholders are unable to generate an effective need for conservatism. Although minority shareholders can express their wishes selling their owned shares, the inalienability (the state-owned shares) or difficult transferability (legal person shares) of shares held by controlling shareholders ensure that the controlling shareholders are not impacted significantly. Therefore, the demand of minority shareholders cannot create a strong incentive for the controlling shareholders. To summarize, this Chinese ownership structure makes the demand of minority shareholders for conservatism difficult to influence the company's decisions.

### **2.3.2 Litigation motivation**

This is recognized as another contribution to theory in conservatism. Beaver (1993) and Watts (1993) found that litigation under the Securities Act in the United States strengthens conservative accounting information in financial reporting practice since the litigation risk is more significant if net assets and earnings are over-reported. Furthermore, the auditors are frequently prosecuted after enterprise bankruptcy since auditors issue an unqualified audit opinion for the financial reports under overestimated assets and income figures. Kellogg (1984) also proved that the ratio of overestimated and underestimated litigation faced by auditors was 13: 1. Therefore, when auditors publish audit reports, they are required to reflect more on conservative accounting. Therefore, because of the more significant litigation risk expectations of overvaluation than that of undervaluation, auditors and companies have motivations to report conservative net assets and earnings. Thus, Kothari et al. (1998) considered that overestimated net assets and earnings have a higher litigation risk than underestimated net assets and earnings, which can reduce litigation costs and shield the interests of the investors.

#### ***Vertical study of litigation***

Kothari (1998) pointed out that the Securities Act before 1966 led to very little litigation, which provided an explanation for the contrastingly rapid increase of conservatism after the 1960s in empirical studies. Basu (1997) took US public companies from 1963 to 1990 as the research object to examine changes in

conservatism on a time series. Basu (1997) followed Kothari's (1988) division of change phases of the US litigation system, and the data was divided into four periods: 1963 to 1966, 1967 to 1975, 1976 to 1983 and 1984 to 1990; the growth of litigation in the four periods were low, high, low, high, respectively. Basu (1997) proved that conservatism significantly improved and the response of earnings to bad news (the economic losses) was more timely than to good news (the economic gains) during high litigation growth periods (namely, during periods when the auditor takes greater responsibility; the confirmation of the bad news is timelier). Moreover, Bushman and Piotroski (2006) verified the stimulating effects of a single economic system structure on accounting conservatism. This study showed that the corporate under a high-quality justice system reflects bad news more in the income statements than those in a low-quality justice system. Moreover, the powerful implementation of the Securities Act (they adopted data on Global Vantage including 38 countries, but about two-thirds companies were from GB, USA and Japan) may slow the confirmation of good news on income, but the weak implementation does not. In conclusion, litigation can increase accounting conservatism. Furthermore, in countries with a perfect legal system and a high degree of protection for the investor, management will provide more conservative accounting information.

### ***Horizontal study of litigation***

Ball et al. (2000) used Basu's method (1997) to examine international cross-sectional distinctions between conservatism under the continental law (or common law) (e.g. USA, UK, and Canada) and under the civil law (or code law) (e.g. Germany, France and Japan), to confirm the different degrees of asymmetry timeliness in earnings in different countries. Ball et al. (2000) proved that the conservatism of the public enterprises under civil law is lower than under the common law, which is ascribed to the different backgrounds of financial reporting from a legal and institutional environment point of view. Moreover, Ball et al. (2000) explained that due to an increased degree of investor protection in the common law system, firms' management and auditors are more likely to adopt more conservative accounting policies in order to reduce litigation risk. They also noticed that under the common law system, the conservatism of companies in the United Kingdom was lower than in other countries, which was attributed to the generally lower levels of litigation risk in the UK than in other countries.

Moreover, Huijgen and Lubberink (2005) compared the distinctions in conservative accounting between British multinational enterprises listed on US exchanges, and the British companies not listed in the US. They found that the financial reports of British enterprises listed on the US exchanges were more conservative. On the other hand, they also showed that the existence of a potential and external litigation

risk increases accounting conservatism.

### ***Litigation environment for China's listed companies***

Watts (1993, 2003) indicated that overvalued net assets and earnings lead to litigation against firms and auditors more often than undervalued net assets and earnings. The shareholders can directly litigate against the firm, which constitutes direct litigation costs, and shareholders directly litigate against auditors, which constitutes indirect litigation costs. Therefore, a management that targets decreasing the total litigation cost will voluntarily, or urged by auditors, report conservative accounting information. Hence, the degree of conservatism is expected to increase with litigation costs. In general, litigation belongs to the ex post relief measures in the law which aim to protect minority shareholders' interests.

If the legal system in China can guarantee that the interests and rights of minority shareholders can be protected by some remedy measurements (e.g. class actions) when minority shareholders' rights have been invaded, this is conducive to improving the expected gains in litigation. One useful remedy measurement could offset the loss caused by the violation of minority shareholders' rights by substantial shareholders and management. Therefore, the firm's potential litigation risks and costs will be increased by overvaluing earnings and net assets. Subsequently, in order to decline litigation risks and costs, the firms will have an intense incentive to employ conservative accounting policies under the legal system that can effectively protect shareholders' rights.

An effective judicial procedure, class action, can be taken to protect shareholders rights. Class action refers to the majority of members having common interests where, due to the excessive number of such members, one or several persons on behalf of all members sue or are sued. In the United States, the litigations under the Securities Act were relatively few when class action was not allowed before 1966 (Kothari, 1988). Class action originated in the United Kingdom in the twelfth and thirteenth-century, and it was formally introduced into "Federal Rules of Civil Procedure" in the United States in 1996. Since early 1980s, class action as an effective judicial procedure has been used to shield the interests of shareholders in the United States. Meanwhile, it had also become the common means for shareholders' civil claims (besides Anglo-American countries, the other countries and regions allowing class actions include Canada, Australia, New Zealand, Malaysia, South Korea and Taiwan. Among these countries and areas, except for South Korea and Taiwan, others are common law countries). Accordingly, the responsibility of management and auditors gradually increased as class action provides an effective way for shareholders to protect their rights.

Supreme People's Court in China released a “Notice of the Supreme People's Court on the Relevant Issues concerning the Acceptance of Cases of Disputes over Civil Tort Arising from False Statements in the Securities Market” (hereinafter referred to as Notice). The local court is allowed to provisionally accept civil securities claims arising from misrepresentations following the “Notice” issued in 2002. Article IV in the “Notice” states that civil compensation arising from misrepresentation can be accepted by the local court in the form of individual or joint action. This provision excludes the most effective legal approach to prevent and punish illegal acts in negotiable securities proved in the United States and other countries through class actions. It increased the difficulty and costs of civil claims for investors. Moreover, for a variety of practical reasons, the Supreme Court temporarily allowed only a single (individual) litigation whereas the necessity was joint litigation (joinder). In China, the joint action is also far from achieving the desired effect in punishing false information, insider trading and earnings manipulation by listed companies and thereby protects the interests of investors.

From a historical perspective, the commercial law in China stems from the civil law system and has been greatly influenced by German commercial law. Under the code law (civil law system), the judge must decide cases in strict accordance with statute and the extended interpretation is very limited, which may result in a relatively low efficiency of the implementation of the law. Insiders of a company can take advantage of loopholes, which the law does not expressly prohibit, to violate the interests of investors without penalty. In factual cases, this can easily result in the rights of investors not being guaranteed.

For example, before the introduction of "Some Provisions of the Supreme People's Court on Trying Cases of Civil Compensation Arising from False Statement in Securities Market" (hereinafter referred to as "Provisions") on January 9 2003, the securities civil suits for compensation of minority shareholders against listed companies were often inadmissible. Even if it was admissible, the court would take the initiative to adjust and adopt litigation settlement to terminate the proceedings. Although the securities civil litigation has been more clearly defined after the introduction of "Provisions", the disadvantageous position of minority shareholders has still not improved significantly. The jurisdiction of civil litigation is owned by the Intermediate People's Court in the place where the issuer or public enterprise is located or where the defendant is located, which requires that investors go to the Intermediate People's Court where the defendant, public enterprise or issuer are located to undertake prosecution. This means investors who are not from these areas should go to court in the place where the public enterprise is located in to undertake prosecution. In addition, since the finance and personnel of the district court depend largely on the local government, the local government is inclined to protect local public firms due to the political

influence of public companies and the local protectionism. The judge often has a prejudice considering the influence of the violating listed company, while ignoring the interests of minority shareholders.

Moreover, a lot of Chinese-listed companies coexist with state-owned assets, and even in some Chinese-listed companies (such as, state-owned enterprises), state-owned assets hold a dominant position. Thus, if the private property rights conflict with the state-owned property rights, the government as the possessor and controller of state-owned enterprises will give more consideration to the interests of state-owned assets in designing specific policy and law related to the share market (Zhang, 2005).

In the last few years, Chinese government has tried to solve these problems. The "Securities Act" was officially issued on 1 January 2006, which stresses the protection for the rights of minority shareholders. This "Securities Act" has strengthened the protection of the interests of minority shareholders to a certain degree. With the development of the legal system in China, litigation in the future may offer a powerful explanation for enterprises adopting conservative accounting policies. However, during the sampling period of this thesis, the Chinese legal system was not yet completely mature. For instance, the "Securities Act" has provisions for the misrepresentation, however does not offer any provision for insider trading, market manipulation, fraud and other illegal acts. These provisions are still relatively general or lack operability, although the new "Securities Act" has introduced some provisions in the relevant areas. For instance, Article 203 in new "Securities Act" requires that "Where anyone violates the present Law by manipulating the securities market, suspect shall be ordered to dispose the securities as illegally held thereby according to law...", but there are no relevant definitions about what behaviour constitutes market manipulation. Due to the uncertainty and concealment of the stock market, it is a challenge for the government to accurately define and effectively regulate the insider trading, market manipulation and other illegal acts. Provided that the scope of the illegal act is not clearly defined, the relevant legal provisions cannot work.

In the last few years, the Chinese government has worked hard to promote the capital market infrastructure construction (e.g. relevant legal and regulatory systems and so on) and promulgate a few securities acts and provisions. Chinese new accounting standards have more detailed and stricter regulations on the information disclosure of listed firms. As the litigation costs are improving, the impact of litigation on accounting conservatism will continue to grow in the future.

Therefore, during the sample period of this thesis, China's legal system was insufficient and legal litigation risk could not put pressure on the erring companies. Litigation only provides very limited



interpretation for earnings conservatism in practice in China.

### **2.3.3 Taxation motivation**

Taxation also is a motivation for adopting conservative accounting policy. The definition and scope of income in taxation is not exactly the same as in accounting. In fact, accounting and taxation are not always same purposes. Accounting accounts for the financial results of an enterprise in accordance with accounting standards, and provides real and relevant information for corporate stakeholders (including banks, debtors, potential investors) to make right decisions (Nobes and Parker, 2002). However, taxation calculates the income, cost, profit and income tax of the enterprise according to the tax law, and its purpose is to ensure the full realization of state taxation, regulate the economy and provide useful information to the state tax authorities (James and Nobes, 2002). Thus, the revenue in tax reporting is often different from those in financial reporting due to the different purposes of taxation and accounting. However, due to both accounting standards and tax law developed by the government in China, the relation between taxation and accounting is complex.

There has long been a debate regarding the correlation between accounting and taxation. From a broader perspective, the correlation model between accounting and tax can be classified into: Anglo-Saxon model (separation model of taxation and accounting), and Continental model (the model of tax dominating the accounting, based on the determination of taxable income). The separation model of taxation and accounting (or Anglo-Saxon model) is widely adopted in the UK and the US. This model lacks a link between accounting and taxation. Both accounting and taxation meet different users of financial information. Subsequently, due to different purposes of accounting and taxation, the Anglo-Saxon model generates differences in revenue. Hence, companies under the Anglo-Saxon model need to calculate deferred tax when preparing tax reporting. By contrast, in a lot of European countries such as Germany and France before IFRS convergence in 2005, GAAP is dominated by tax regulation. Under this continental model, the calculation of revenues and expenditures in the financial report should comply with the tax regulations. In addition, this model is considered to decrease the decision-making effectiveness of financial statements.

For the Anglo-Saxon model, which is mainly employed in the United States, taxation as an interpretation of accounting conservatism is relatively new and can be traced back to 1909 (Watts, 2003). Under the Anglo-Saxon model, the company should proceed from the pre-tax accounting profit and consider the impact of a series of adjustment factors to obtain income tax expenses. These factors mainly include the permanent differences, temporary differences, etc. Therefore, the company has an incentive to defer

revenue by adopting conservative accounting policies (Shackelford & Shevlin, 2001). In order to decline current tax, firms intend to accelerate recognizing loss and delay recognizing gains. The inconsistencies of recognizing incomes and expenditures (conservatism) defer part of the tax payment, which decreases the present value of taxes.

When the taxable income is linked to reported earnings, the company can reduce the current value of the tax through deferred recognition of revenue and accelerated confirmation of costs or expenses, which generate the company's demand for accounting conservatism (Watts, 2003). Shackelford and Shevlin (2001) also found that taxation factors motivate corporates towards consistency in income figures in accounting reports and taxable income in the US. As long as the company's operating profit, taxable profits and interest rates are positive, companies have an incentive to delay the confirmation of revenue to reduce the present value of tax. Qiang (2007) examined the data of US-listed companies and believed that the taxation factor is one of the reasons for conservatism, especially unconditional conservatism. In this study, some exceptions that existed in some scandal companies, such as former WorldCom, are highlighted. Due to inadequate capitalization, which was caused by an aggressive strategy, WorldCom had to change its interconnection expenses with other companies to capital expenditures to get a tax refund within a few years. Meanwhile, this company also utilized various provisions including deferred taxes, bad-debt provision and accrued expenses in previous years to offset its interconnection expenses. In this way, the income of the company was magnified and used to manipulate its share prices. Obviously, although the inflated income will increase the company's tax, the advantage of manipulating share prices motivates the company to magnify its taxable income by using different methods. Therefore, it is hard to say that taxation affects accounting conservatism based on these examples.

Therefore, in the high degree of separation model, taxation may not provide an effective explanation for conservatism. Desai (2003) considered that because of the separation between the tax system and the accounting system, tax factors can only affect the accounting earnings weakly. Thus, taxation as a factor may not necessarily support the reasons for companies adopting conservative accounting policies in financial reporting. The accounting and tax models in the UK and the US from a global perspective are typical Anglo-Saxon models. In the countries with the Anglo-Saxon model, the separation of accounting income and taxable income has had a tendency to expand in recent years (Manzon and Plesko, 2002; Desai, 2003).

Different from the separation model, for the model of tax determining accounting practices mainly used in France and Germany before 2005, accounting regulation is in line with the tax regulation. However, under

the Franco-German model, tax mainly determines the financial report rather than the other way around. Because the tax dominates accounting regulations, companies' economic activities that are accounted must be in accordance with the requirements of these taxation laws. For example, the factors for the depreciation of fixed assets, which include the useful life, residual values are strictly limited by the tax law. For the separation model of taxation and accounting, companies can choose different methods to calculate the depreciation costs based on the actual economic activities. However, under the Franco-German model, the depreciation method adopted by the company must meet the relevant provisions in the tax law. Subsequently, companies who can get tax preferences need to set up a separate account to record the different amounts of depreciation costs. Therefore, the incentives of tax for conservatism also have been weakened to some extent. Consequently, in the two models of accounting and tax, the incentives of tax for conservatism are very limited.

### ***Taxation environment for China's listed companies***

The history of accounting development in China can be divided into three periods: the planned economy period (1949-1978), planned commodity economy period (1979-1992), and the socialist market economy period (after 1992) (Wang, et al., 2009). During the planned economy period and planned commodity economy period, the special system determined the taxation and accounting model in China. During these two periods, the economic activities were totally determined by the government and nearly all of companies were state-owned. Therefore, the main purpose of accounting was to record the revenues of companies. Moreover, it also needed to provide guidelines on the final accounting of revenue and expenditure. Meanwhile, the accounting system mainly depended on the requirement of taxation and fiscal policy. It means that there was no difference in incomes between tax and accounting rules. Since 1992, with the gradual integration of China's standards with the international standards, the disparity between tax rules and accounting rules have shown a trend of gradual divergence. After the implementation of "Accounting System for Business Enterprises" in 2001, this trend was particularly evident. Dai et al. (2005), and Dai and Yao (2006) provided relevant experience evidence for this change. As provided by the basic guidelines of "Accounting System for Business Enterprises", enterprises' accrual accounting should be based on the current period regardless of whether the cash is received or paid. However, tax law has not fully recognized the applicability of accrual. The recognition of enterprises' revenues and costs are aligned to the cash basis accounting. The separation between tax rules and accounting standards is directly affected by the reform of the accounting standards. In particular, the re-introduction of conservatism as a basic principle directly leads to the widened degree of separation between the accounting system and tax regulations. The separation model of taxation and accounting

reduced the incentives of tax in using conservatism principles in financial reporting. Because of the separation of financial accounting and income tax accounting, the demand of public enterprises for conservatism is significantly declined; not only that, Chen and Li (2001) even found that local governments use fiscal and tax measures to help the listed companies to manipulate profits.

In addition, regulatory system in Chinese capital markets is different to other countries that apply IFRS. Due to strict requirements for listing qualification, companies are primarily inclined to increase performance to satisfy the listing standards, rather than hide performance for tax breaks. Cai et al. (2003) found that in the majority situation, Chinese firms are more inclined to improve their profitability by the earnings management in order to comply with regulatory policies, satisfy listing standards and secondary offerings, or avoid delisting. This can prove that the earnings management of public enterprises in China is not tax minimization-oriented.

In summary, in the high degree of the separation between tax rules and accounting standards, or in the mode where taxation determines accounting, the incentives of taxation for use in the conservatism principle are relatively weak. Only under the model in which tax rules follow accounting standards, can the incentives of taxation for use in the conservatism principle in financial reports be maximized. However, as long as the tax law persists in implementing the principle of certainty and the principle of truthful deduction, the incentives of taxation for conservatism are greatly compromised. Thus, taxation has a lower ability to explain the reason for enterprises adopting conservative accounting in the Chinese context.

### **2.3.4 Regulation motivation**

Last but not least, regulation is a significant reason of appearance and existence of conservatism. As mentioned by the political cost hypothesis, firms are inclined to understate income by adopting conservative accounting policies to avert attention from those who have an eye on high profit industries, such as lobby groups or trade unions. Watts (2003) indicated that the overestimated income or net assets are likely to generate higher political costs compared to underestimated net assets or net income.

Moreover, investors (debt holders and shareholders) have demand for conservative reports which has already been discussed in the previous section. Therefore, investors will be more dissatisfied with the relevant regulatory bodies (accounting standards-setting bodies) if listed companies over-report profits or assets than if they under-report profits or assets. This is due to when the company is overvaluing assets, it is likely to cause “tunnelling”, allowing investors to take advantage, especially major shareholders.

Subsequently, the increased pressure from investors on the setting bodies who establish official reporting standards forced them to formulate accounting standards in a conservative manner to avoid criticism from investors. Therefore, the setting bodies who establish the official reporting standards and regulatory bodies also have an incentive to introduce the conservatism principle into standards. It is similar to the asymmetric cost of litigation in that the political cost (criticism) of standard-setting bodies to the accounting practice is asymmetrical.

Furthermore, Watts (1977) believed that the loss of overvalued assets or income is easier to be observed and exploited than the forgone interest of undervalued assets and income. This phenomenon also provides incentives for standards-setting bodies to adhere to conservatism principles, and it apparently led to the US Securities and Exchange Commission (SEC) ban on overvalued assets in the first 30 years (Zeff, 1972; Walker, 1992). From the perspective of regulation, it shows that accounting should be conservative. Ball et al. (2000) found that the United Kingdom, which has contract requirements similar to Australia and Canada, had significantly lower levels of conservatism because of lower accounting regulations when compared to the accounting conservatism in different countries at the international level, which supports the accounting regulation being a motivation for accounting conservatism.

Theoretically, the accounting system regulates the generation process of accounting information and it will affect the level of conservatism in the financial report in the future. Therefore, once the standards-setting bodies find that companies have the behaviour of overestimating the value of assets or income, the setters will take more stringent punitive measures or develop more conservative accounting standards. In this way, the standards-setting bodies affect the company's accounting conservatism. Barth et al (2006) compared 411 enterprises from 24 countries between 1990 and 2004 that changed from applying their national GAAP to applying IAS. Barth et al (2006) found that after the company started applying IAS, the earnings management in the financial statements became lower; the recognition and confirmation of loss was timelier (higher conservatism); the value relevance of accounting information was higher, and the cost of capital was lower than before. This proved that IAS brings improvement to accounting quality and conservatism.

Moreover, Srivastava, and Tse (2008) found that from 1972 to 2006, the degree of conservatism in public companies in the US continued to increase, both from the more timely confirmation of losses and the less timely confirmation of profits. Furthermore, they found that regulators issued many accounting regulations for high-tech industries in recent years, such as SOP 97-2 (Software Revenue Recognition), SAB 101 (Revenue Recognition), SFAS 86 (Software Development Costs), SFAS 121 and SFAS 144

(Impairment of Long-Term Assets), SFAS 123 (Accounting for Stock Options), SFAS 142 (Impairment of Goodwill), etc. These accounting standards require enterprises to employ conservative accounting practices. As a result, the level of conservatism in high-tech industries has grown faster than in other industries, and the difference between the two has happened because of the less timely confirmation of gains in the high-tech industry. This supports the regulation explanation for accounting conservatism.

Bushman and Pitroski (2006) no longer follow the dichotomy division of Ball et al. (2000), which simply divides law systems into the common law system and the civil law system, and subdivides into four areas: the legal and judicial system, the securities law, the political economy, and the taxation system. They believed that these four aspects affect the behaviour of managers, investors, regulators and other market participants, which in turn affects the motivation of financial report-makers, and therefore accounting conservatism. After investigation and analysis, they found that the first three aspects (the legal and judicial system, the securities law, and the political economy) have a significant impact on conservatism, but the impact of tax law is not significant.

Ball et al. (2003) studied differences in conservative accounting in the four East Asian regions: Singapore, Hong Kong, Thailand and Malaysia. Historically, accounting standards implemented in these four regions all originated from common law. However, the motivations of the financial report-makers of these four regions, including managers and auditors, are similar to those of the civil law system. The research result shows that the timeliness of accounting earnings in these four regions is similar to that of the civil law system and the level of conservatism in these regions is also similar to that of the civil law system, which is lower than that of the common law system. Therefore, they came to the conclusion that the accounting standards do not determine the quality of the financial report. On the contrary, the impact of the motivation on the financial reporting results dominates. For those countries that want to strive for higher-quality financial reporting, changing managers' and auditors' motivations may be more important than changing accounting standards.

However, Holthausen (2003) pointed out that the sample period selected by Ball et al. (2003) is 1984 to 1996, but the IASC (International Accounting Standards Committee, which was reorganized to become IASB on April 1 2001) began its Improvements and Comparability Project in 1987, and these new standards were not implemented until 1995. Therefore, the results by Ball et al. (2003) do NOT indicate that accounting standards have little or no impact on the conservatism of accounting practices or the quality of financial reports. This may be due to the fact that the accounting standards in the sample period are not conservative enough, which leads to the dominance of the financial report makers' motivation in

determining the conservatism degree of accounting practice. Holthausen (2003) also believed that the high quality of international financial reporting standards may possibly reduce the adverse effects of financial report makers' motivation, thereby improving the conservatism and quality of financial reporting.

In addition, in reality, it is often difficult to assess to what extent the standard-setting bodies strengthen the use of the conservatism principle for their own interests. In fact, through the development of a conceptual framework or similar guidelines, standards-setting bodies can reduce these risks to some extent.

Watts (2003) pointed out that the accounting regulators once encouraged accounting conservatism, but recent accounting standard-setters seem to ignore them and advocate a "neutral". Watts (2003) also emphasized that although regulation factors have an impact on accounting conservatism, regulators increasingly pay attention to prejudice caused by accounting conservatism and advocate more value relevance of accounting information (even the relative concept of prudence has been removed from the conceptual framework of IFRS since 2010).

### ***Regulatory environment for China's listed companies***

Since the establishment of China, all accounting standards have been set by the government. Therefore, over different economic times, Chinese government has had a completely different attitude towards conservatism, which directly affects the development of accounting standards. Moreover, ideas and theories depend on the specific economic and social environment. As mentioned above, the history of China's accounting system can be divided into three periods, which include the planned economy period (1949-1978), planned commodity economy period (1979-1992), and socialist market economy period (after 1992).

In the planned economy period, China adopted a highly-centralized planned economy system and a financial system of unified revenue and expenditure. In this highly centralized management system, the functions of government and enterprise were not distinguished, and the law of value and role of the market were ignored. Specifically, the government set and adjusted unified product prices, and the enterprises' assets were changed upon production price changes, such changes being resolved by state funds. In other words, the risk was borne by the state. Second, the enterprise funds mainly came from state funding and the National Bank. That means the enterprises belonged to the government, with no risk

of bankruptcy. Third, commercial credit between enterprises was prohibited and monetary settlement organized by the National Bank, which was the credit centre and settlement centre; therefore, companies did not carry risk with regard to accounts receivable.

In the planned economy period, the government took all the risk as the sole owner of the companies in China. Moreover, even if there was a risk, due to offset between enterprises, it would not have much impact on the national economy. Under this system, in the production, distribution, exchange and consumption, the enterprises lacked decision-making power. Correspondingly, companies in this highly centralized planned management system did not undertake any responsibility for the results of an operation. Therefore, companies would not have any business risks either. Companies simply executed the national unified accounting system, and prepared financial statements in accordance with the directions of superiors. Accounting reflected the economic activity without relating to the conservatism issue in accounting treatment.

In this period, the government as the sole owner of Chinese enterprises did not have the motivations to use conservatism. Therefore, the standards-setting board as a government department did not have incentives to develop conservatism. Until the 1990s, accounting conservatism was even regarded as a way of Western accounting scholars catering to capitalists to conceal their high profits, or an accounting theory for valuation in order to gain the trust of short-term creditors ("what is Conservatism?"- Communication of finance and accounting 1982 (08), 2016). Before 1992, the accounting standards did not provide any incentives to use the conservatism principle in accounting treatment.

Therefore, the special social and economic background of China influenced the government to have different views for conservatism in these first two periods. The standards-setting boards as a government department forbid the conservatism principle standards. This condition did not change until the socialist market economy period.

In the socialist market economy period, China experienced deep accounting system changes three times (in 1992, in 2001, and in 2006). During the process of accounting standards reforms and the regulatory for China's listed enterprises, the requirements for conservatism of accounting information can be regarded as from weak to strong. Since 1992, conservatism was explicitly introduced into Chinese GAAP. Since then, conservatism had been gradually improved until the ASBE in 2006. Since other incentive factors of conservatism (especially litigation and taxation) may not provide enough explanations as mentioned before, it provides a good opportunity for research under this background and in this area. Therefore,



China's research in this area is still relatively abundant. Moreover, 2001 is a significant time point since after 2001, the accounting information from Chinese public enterprises has generally become conservative, but not before 2001 (Chen & Huang, 2006).

Through the research of Chinese public enterprises between 1993 and 2003, Chen and Huang (2006) found that the degree of conservatism in China gradually improved after 1998, and financial reporting of public enterprises since 2001 have shown conservatism. By comparing the distinctions in accounting earnings quality between pre- and post-2001 periods of the accounting system reform, Zhu (2006) proved that in the post-2001 period, conservatism, timeliness and the earnings quality had been improved significantly, suggesting that regulation changes can significantly affect conservatism. Zhu (2006) also emphasized the necessity of reforming the other relative systems (Corporate governance, and capital market). The study of Zeng et al. (2008) demonstrated that the accounting information of Chinese-listed firms is already conservative in general. Conservatism means that the losses are confirmed timely, but gains are verified strictly. They found that accounting policy regulation for the listed companies enhance accounting earnings conservatism of the listed companies, but this was mainly due to more timely loss recognition. Moreover, Li (2007) found that the establishment of a credit file system in Chinese capital markets is indeed able to improve the accounting information quality of public firms to a certain degree and therefore Li considered that regulation can directly influence conservatism in China.

But some studies have argued that the companies with losses are the main cause of conservatism found in early literature. Li and Li (2005) studied the earnings conservatism of Chinese loss public enterprises and earnings conservatism of entire share markets, and found that the earnings conservatism of entire share markets in previous studies is not real conservatism. However, the loss companies showed conservatism for the whole sample. They believed that China's delisting control system makes listed companies in loss years choose conservative accounting policy, and not use conservative accounting policy when in profit years. Qu and Qiu (2007) also believed that the impact of the accounting system on accounting conservatism is small, and they also found that the conservatism improvement after the implementation of accounting standards in 2001 comes mainly from the loss companies based on the results of yearly analysis. Chen and Huang (2006) used a component regression method to study the conservatism change with corporate earnings changes. Their empirical results showed that high levels of company earnings will increase the recognition of good news, which include higher profit and lower expenses and reduce recognition of bad news and therefore accounting conservatism is lower; low levels of company earnings will increase recognition of bad news and reduce recognition of good news and therefore accounting conservatism is higher. This result proved that public enterprises with different income levels have

different conservatism characteristics in China.

Moreover, in the relationship between accounting standards regulation and accounting information conservatism, the study result of Niu and Wang (2006) showed that the accounting policy regulation has an inverted U-shaped relationship with accounting information conservatism and the quality of accounting information. Namely, with the strengthening of accounting policy regulation in public companies, conservatism in accounting information will increase from low to high and can improve the accounting information quality of public enterprises. However, after reaching a certain threshold, the growth of conservatism of accounting information will damage the accounting information quality of public enterprises. It can be seen from the existing research results that Chinese accounting quality before 2006 was at a low level. That means the accounting conservatism in China's listed companies seemed to have room to increase before 2006. Therefore, the strengthening of accounting policy regulation for the public enterprises in China will help the improvement of conservative accounting information from the lowest to the highest level and will also increase the quality of the financial statements of Chinese public enterprises. However, accounting information conservatism also has a cost: only when the relationship between benefit and cost of accounting information conservatism is confirmed, can conservatism in the listed companies achieve an optimal level and quality of accounting information of listed companies can attain the optimal level.

## **2.4 Relationship map of stakeholders in incentives of conservatism**

The relationship map can be built by extracting stakeholders from theories that are partly based on the theories of conservatism. On this basis, factors which can control the effect of demand by one stakeholder for conservatism to another stakeholder are added into the relationship map. Thereby, a completed relationship and influence map can be established. This map can be used to analyse the demand of the stakeholders for conservatism and how the conduct of one stakeholder affects other stakeholders.

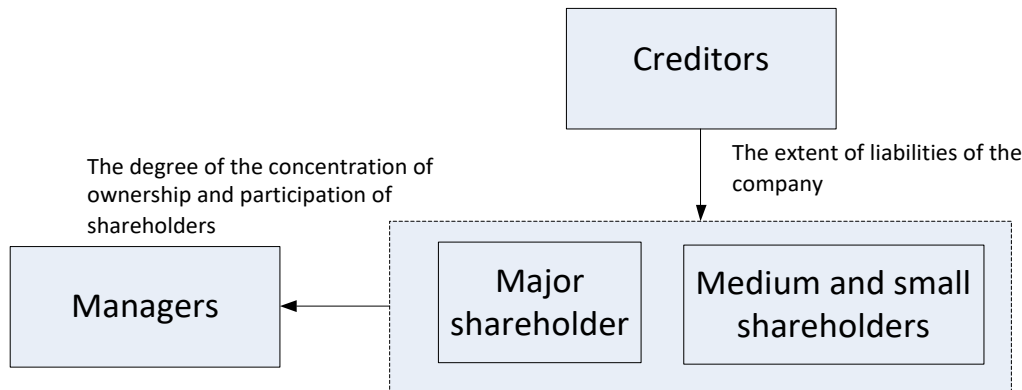
From the previous section of this thesis, it can be drawn that accounting conservatism is derived from cautious reaction to uncertainty. Because of information asymmetry, the accounting information users who lack information relative to other parties in the company have an incentive to encourage conservative accounting information (contract, litigation, and regulation) (Watts, 2003). On the contrary, the company's insiders can use their dominant position of information asymmetry against taxation. Therefore, the motivating factor for conservatism can be discovered by understanding the demand of all the parties impacted by information asymmetry and by analysing this from different angles. Therefore, based on the stakeholders' relationships and status with regard to information asymmetry of different parties, a

relationship map can be established that clearly shows the process of impact of a variety of factors and parties on conservatism as a whole.

First, for the contract factors, there are three main stakeholders including creditors, shareholders or investors, managers (Watts, 2003). Among the three parties, if all shareholders, including major, medium and small shareholders, are seen as a whole, or even the shareholders and managers are seen as a whole, creditors are regarded as the most unfavourable ones under the information asymmetry and take an inferior position to get relevant information about the company (Ahmed, 2002). Therefore, creditors are more concerned with the lowest valuation of the net assets of the company with minimum solvency. This will drive creditors into having motivations and demands to use conservative accounting information to avoid the company intentionally overestimating assets to get more loans. The company's demand for loans allows the company to provide conservative accounting information to meet the requirement of creditors (Chen et al, 2010). Therefore, the basic influence of creditors on the company is positively correlated to the extent of liabilities of the company. If the company does not have liabilities or relevant plans, the creditors' demands will not affect the company.

In addition, in the main stakeholders of contract, shareholders or investors are the second party in the absence of information. They are poorer than managers but better than creditors under information asymmetry. Although shareholders or investors are the company's actual owners, they have access to less relevant information about the company compared to managers (Watts, 2003). In order to offset overly optimistic opportunism and confine blind business expansion by managers, shareholders or investors also have motivations and demands for using conservative accounting information to guard against such managers' behaviours. The extent of the need for a shareholder for conservatism largely depends on the degree of the concentration of ownership and participation of shareholders in management. From the point of view of a contract, this is the main reason that the accounting of private companies is significantly less conservative than listed companies (Ball et al., 2005). Moreover, when shareholders are subdivided into the major, medium, and small shareholders, the position of medium and small shareholders under the information asymmetry is significantly inferior to major shareholders. The medium and small shareholders have the demand for conservatism to regulate the major shareholders. Hence, the position of all shareholders depends on the ownership structure of the company.

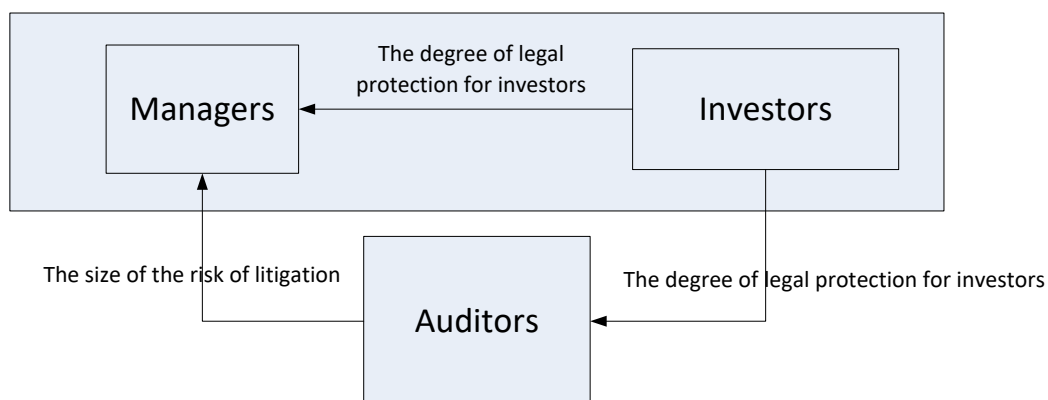
**Figure 2.4.1. Relationship map for contract factor**



(Source: Author)

Second, for the litigation factor, there are three main parties including investors, auditors, and managers. Investors own less information than managers and have demands for using conservative accounting information. The influence investors have on managers and auditors is based on the degree of legal protection for investors. This explains the reason for accounting conservatism of listed companies in common law countries being higher than in civil law countries (Ball et al., 2000) and the conservatism in US-listed companies changing with the change in litigation pressure (Basu, 1997). Although auditors themselves do not have requirements for conservatism, the legal litigation pressure from investors urges auditors to use conservative accounting information to transfer the risk. Therefore, the magnitude of the risk of litigation will directly affect the degree of requirements auditors have regarding conservative accounting information. It is the same with the contract: managers, among the three parties, own the most complete and extensive information regarding the company. Managers as parties who undertake the ultimate risk of litigation have the motivation to opt for higher levels of accounting conservatism.

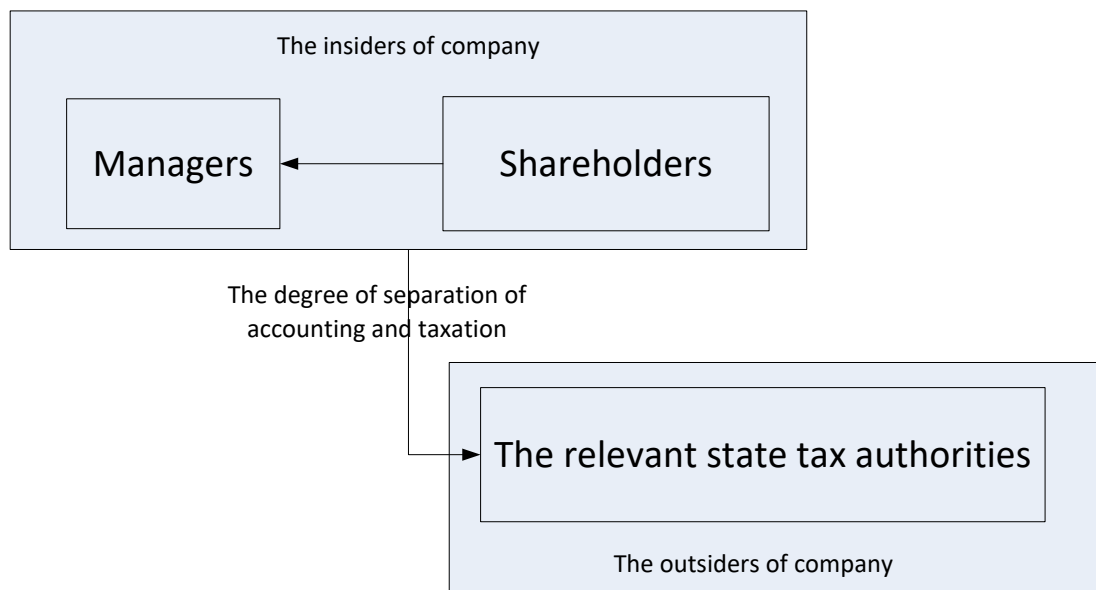
**Figure 2.4.2. Relationship map for litigation factor**



(Source: Author)

Third, for the taxation factor there still exists three main parties, composed of the relevant state tax authorities, shareholders, and managers. Due to the separation of ownership and management of enterprises, the value of interests between owners and managers is difficult to coordinate (Desai, 2003). However, the purposes of owners and managers are basically the same, reducing the current tax liability and improving the current value of the business when considering the taxation independently. Therefore, shareholders and managers can be viewed as one party – inside of the company. In addition, the taxation factor is different from the other three factors. For the other three factors, due to the asymmetry of information, the disadvantaged parties use accounting conservatism to regulate and affect the advantaged parties. In the taxation factors, company insiders (shareholders and managers) use its dominant position under the information asymmetry against the outside of the company, the national tax authorities, to reduce current tax. The demand of a company for conservatism is mainly based on the degree of separation between accounting and taxation (Desai, 2003). Among the parties, government and relevant tax authorities are a weak side under information asymmetry, and they have an incentive to use tax law and regulations, such as the provisions for highest proportion of provision for bad debts, to prevent the behaviour of excessive undervaluation manipulated by shareholders or investors, and managers.

***Figure 2.4.3. Relationship map for taxation factor***



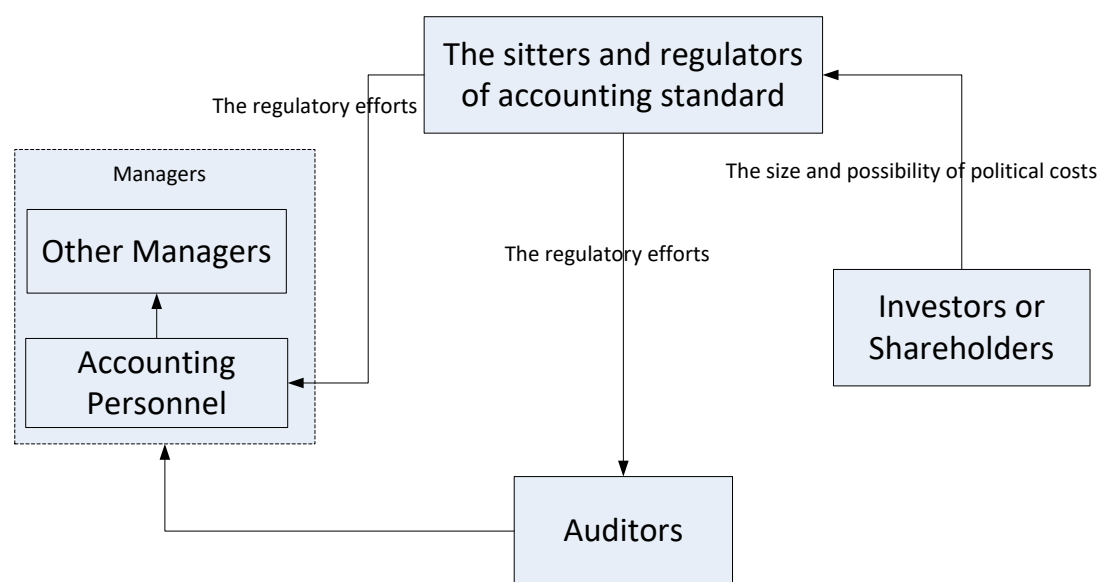
(Source: Author)

For the regulation factor, there exists four main parties: the setters and regulators of accounting standards, investors, auditors, and managers. Due to the huge number of medium and small investors, investors are the disadvantaged party under the information asymmetry compared to the others. As previously

mentioned, investors, especially medium and small shareholders and creditors have relatively strong requirements for accounting conservatism (Ashbaugh-Skaife et al, 2005; Chen et al, 2003). When the demands of investors cannot be met by means other than litigation, the investors will be dissatisfied with standard-setters and regulators and may criticize them. Therefore, the extent of influence from investors on accounting standards-setting boards depends on the magnitude of risk of criticism. Therefore, standards-setting boards will establish strictly conservative accounting standards. Then, managers (especially accountants) and auditors have to follow these conservative standards. As a result, the extent to which standards affect conservatism is determined by the level of regulatory efforts.

Because of the regulation of accounting standards and pressures from the litigation risk, auditors both actively (risk transfer) and passively (standards regulation) require managers (mainly referring to the accounting personnel) to keep accounting information more conservative. Finally, the manager is the most advantaged party under the information asymmetry. In the regulation factor, the manager (here mainly refers to accounting personnel) needs to obey the requirements of accounting standards and audit to prepare conservative accounting reports. For managers, they can be subdivided into accounting personnel and other managers. In general, although the accounting personnel themselves have to follow the accounting standards and the requirements of auditors to generate conservative accounting information, they do not have a demand for accounting conservatism. Furthermore, the accounting personnel themselves, unlike other managers, do not have demands to work against accounting conservatism, but may be driven by the demands of the executive team (e.g. CEO and CFO of the firm).

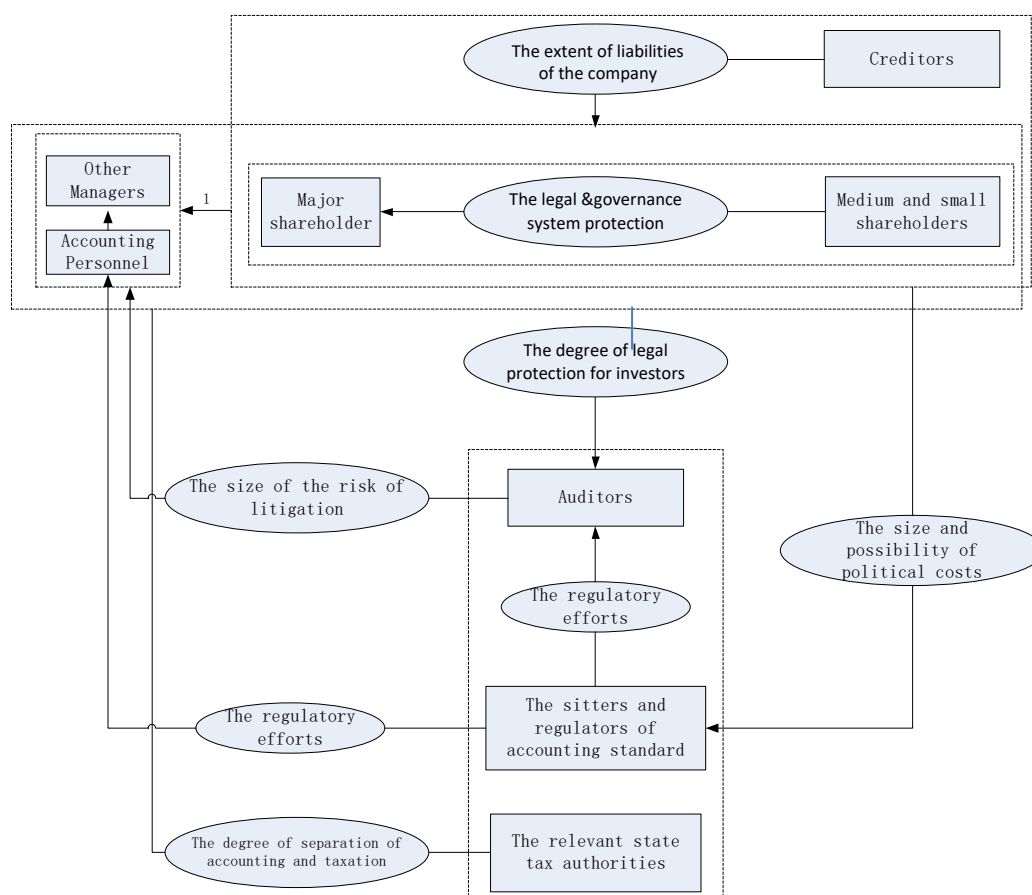
***Figure 2.4.4. Relationship map for regulation factor***



(Source: Author)

Finally, based on the relationship of four figures, the whole relationship of all parties (or stakeholders) can be established (please see Figure 2.4.4). Each block in this relationship map represents one stakeholder of conservative accounting information. It includes a total of eight specific stakeholders: creditors, medium and small shareholders, major shareholders, accounting personnel, other managers, auditors, the setters and regulators of accounting standards, and the relevant state tax authorities. In different studies and theories on the motivations of conservatism, several specific stakeholders may be considered as a whole to be studied, such as shareholders (consisting of medium and small shareholders and a major shareholder), managers (consisting of accounting personnel and other managers), investors (consisting of shareholders and creditors), insiders of the company (consisting of shareholders and managers), and outsiders of the company (consisting of auditors, the setters and regulators of accounting standards, the relevant state tax authorities). This is mainly determined by the different purposes and objects of the research.

**Figure 2.4.5. The whole relationship map of all parties**



Note1. The degree of the concentration of ownership and participation of shareholders in management; The degree of legal protection for investors

(Source: Author)

Each ellipse represents one condition or basis of one party's influence on the next party. For example, the extent of liability of the company decides whether the demand of creditors for conservatism influences the company and what the extent of such influence is. Therefore, the ellipses in this map are a kind of 'Switch' which can decide whether a group of stakeholders' demand for conservatism can influence or transfer to other stakeholders.

The demand of stakeholders for conservatism is not completely independent of the 'Switch'. For example, in Figure 2.4.1, the company with a high debt ratio will increase the demands of creditors for conservatism in general. However, the 'Switch' does not always affect demands of stakeholders. In China, since most banks are state-owned, the state-owned companies with a high debt ratio may get policy support from the government, which makes the demands of creditors for conservatism less evident. Therefore, in order to unify general and special situations, this thesis considers first to determine the 'switches' and the extent to which they transfer conservatism demand, and then according to the actual situation, analyses the degree of demand from stakeholders.

The condition or basis of influences between stakeholders or stakeholders' groups, such as the weakest effect and strongest effect, can be regarded as positive or negative relationships. However, the conditions of the weakest and strongest effects are the ideal situation. Actually, these conditions are rare or even absent. Based on the information asymmetry, the figure can be divided into three layers. The first layer includes the medium and small shareholders, creditors. Both of them take the most disadvantaged position under the information asymmetry. Creditors and medium and small shareholders in the contract theory and litigation theory are the main demanders for conservative accounting information. The second layer includes auditors, the setters and regulators of accounting standards, and the relevant state tax authorities. They themselves do not have a strong demand for conservatism like the parties in the first layer. However, due to the purposes of reducing costs (political costs, regulatory costs and litigation costs) and risks, auditors and the setters and regulators of accounting standards will encourage, regulate or monitor the company using conservative accounting information. The relevant state tax authorities will allow a certain degree of conservative accounting because of the state's protection of investors and other reasons (such as provision for bad debts). The third layer comprises major shareholders and managers. In contract and litigation theory, they have an incentive to fight against conservatism and are the main regulated objects. However, in litigation and tax theory, they also have some motivation to make the accounting information conservative. However, these motives are weakened in China due to various negative factors such as imperfect law in litigation and separation of taxation and accounting systems (Dai et al. 2005; Dai and Yao, 2006).



In many studies (Watts, 2003; Basu 1997; Zhang, 2007), medium and small shareholders, and major shareholders are treated as a whole part - shareholders. The position of the whole group, the shareholders, under the information asymmetry is not fixed, such as the ownership structure of listed companies in the US being highly dispersed. Subsequently, there is no major shareholder. Meanwhile, the overall position of shareholders will be located in the first layer. All shareholders will have a strong demand for conservatism. In contrast, if the ownership structure of a company is highly concentrated and is owned by one or several persons who are involved in the operation and management, the overall position of shareholders will be located in the third layer. Consequently, shareholders in the highly concentrated company will have less or even no demand for conservatism (Ashbaugh-Skaife et al. 2005). However, if the ownership structure of listed companies is concentrated and there exist a large number of medium and small shareholders such as China's listed companies, all shareholders will be divided into two parties including medium and small shareholders with demand for conservatism, and major shareholders against conservatism. In this case, whether all the shareholders show a demand for conservatism will be decided by the strength of both sides. The power of both sides is affected by the standards, the legal system, governance, etc. Therefore, in the study of conservatism of listed companies, if the shareholders are seen as a whole, the ownership structure of various countries and different companies need to be discussed. Moreover, not only can this figure be applied to listed companies, but also can be used in private companies. The main difference between the two kinds of companies is the ownership structure and management mechanisms. Overall, the most disadvantaged party under the information asymmetry has a demand for conservative accounting information. In contrast, the most dominant party (managers) under the information asymmetry has motivations against conservatism.

#### ***Analysis of the influence of new accounting standards on conservatism based on the relationship map***

Based on these relationship maps and the foregoing literature review, it can be found that the regulation factor is determined by other factors. The regulation factor explained the impact of the development of accounting standards on conservatism. Therefore, it will be incomplete if the regulation factor is treated independently. Standards are a process to seek concerted action for one target or multiple targets in a group. Diversification of economic stakeholders and heterogeneity of interests have expanded the stakeholders of accounting standards to the entire public, which requires different content and different levels of accounting information from different perspectives. Therefore, many stakeholders are involved in the process of accounting standard-setting.

As mentioned earlier, investors' demand for conservatism will affect accounting standard-setting in terms

of conservatism. In turn, the quality of accounting information also affects investors' demand for conservatism. This demand for conservatism from investors can be explained by contract theory and litigation theory. The managers as the users of accounting standards keep accounting information and reports in accordance with accounting standards. The reasons for managers working against conservatism can also be explained by contract theory. In addition, the relationship of tax regulation and accounting standards will decide the extent of conservatism. Hence, the regulation factor is not an independent explanation and needs a supplement of other explanations. The new ASBE in China, compared to former standards, are generally considered to be of higher quality and comparability and closer to the IFRS, since the new ASBE are largely convergent with the IFRS. The IFRS convergence in China not only improves comparability in financial reporting but also enhances a company's information disclosure environment and disciplines the financial intermediary industry. Since the conditional conservatism of the listed companies is determined by the demand of shareholders and debtholders, the improvement from the IFRS convergence in China would reduce this demand. Therefore, on the basis of the relationship map, this thesis will establish causality flow in the subsequent part (section 2.6 and 2.7) to further explain and analyse the impact of the IFRS convergence on the demand for conservatism.

## **2.5 Consequences of conservatism**

This section reviews the effect of conservatism on earnings quality, information environment, monitoring strength, the risk of moral hazard, the likelihood of adverse selection, firm value, and the cost of capital.

Extant research on the influences of conservatism on financial statements is primarily concerned with its impact on the earnings quality. The study by Dechow et al. (2010) analyzed the definition of earnings quality in the extant researches and common proxy variables in measurement. They contended that the definition of earnings quality has not yet reached a consensus, which, this thesis posits, may be caused by the distinction in scholars' perceptions of how to use the accounting information (for example, valuation versus contract).

George and Gary (2015) studied the influences of conditional conservatism on the earnings, and found that the predictability and persistence of reported earnings decrease through conditional conservatism. The study by Chen et al. (2013) supported a negative correlation between conditional conservatism and earnings persistence found in previous studies and also found that the pricing multiples on earnings are declined by the adverse influences on earnings persistence. Furthermore, Chen et al. (2013) also found that pricing multiples and earnings persistence are higher for unconditionally conservative earnings than for conditionally conservative earnings.

Bandyopadhyay et al. (2010) and Kim and Kross (2005) provided the evidence that as the degree of conditional conservatism increases, the capability of earnings in forecasting future operating cash flows will increase, however the capability of earnings in forecasting future earnings will decline. Extending the research of Kim and Kross (2005), Bandyopadhyay et al. (2010) proved a positive relation between conditional conservatism and the predictability of future cash flows, and a negative correlation between conservatism and the predictability of future earnings. The results of these studies are mainly due to the fact that the temporary fluctuations in earnings will improve timeliness of bad news recognition, leading to less predictable and persistent earnings from one period to the next.

In general, if more information is provided rather than less, information asymmetry will be mitigated. Thus, the timely recognition of losses is typically theorized to mitigate information asymmetry. Conversely, information asymmetry may be exacerbated by deferred recognition of gains due to hidden future information. Information asymmetry also may be exacerbated by unconditional conservatism, since analysts and investors may conceal information related to the company value, assuming there is no other source of such information.

In addition, LaFond and Watts (2008) proved that information asymmetry is positively correlated with conditional conservatism and believed that information asymmetry is a major reason for the generation of conditionally conservative accounting. Moreover, LaFond and Watts (2008) also contended that critics of conservatism have misunderstood the positive relationship as information asymmetry being caused by conservatism. They theorized that there is demand from stock market investors to alleviate the influences of information asymmetry through conservative accounting (2008), and thus conservatism will generate within an asymmetric information environment.

The research by Hui et al. (2009) supported the conclusions of LaFond and Watts (2008): they (2009) found a negative association between conservatism and voluntary disclosure, suggesting that the timely recognition of bad news can be used as an alternative for voluntary disclosure. Therefore, they (2009) believed that conditional conservatism reduces the demand for disclosing bad news.

Most current findings provided ex-post evidence that conditional conservatism conduces to the improvement of business decisions. Findings by Francis and Martin (2010) presented that conservatism as a tool can restrict management's investment in negative NPV projects. Because of the existence of conditional conservatism, the loss from negative NPV projects is confirmed more timely than gains from positive NPV projects, which increases the possibility of abandoning negative NPV projects and investing in positive NPV projects. In particular, they found that there is a positive correlation between the expected

acquisition profitability and asymmetric timeliness of earnings, which is line with that it is more profitable to invest in conservative companies.

Louis et al. (2012) theorized that due to excess cash holdings in negative NPV projects, the investment becomes inefficient, meaning that the market value of every additional dollar in cash holdings is worth less than one dollar. Since the investment in negative NPV projects can be suppressed to some extent by the timely loss, Louis et al. (2012) found that conditional conservatism can improve the market value of cash holdings. This indicates that the efficiency of cash holdings in investment will be improved with the increase of conditional conservatism.

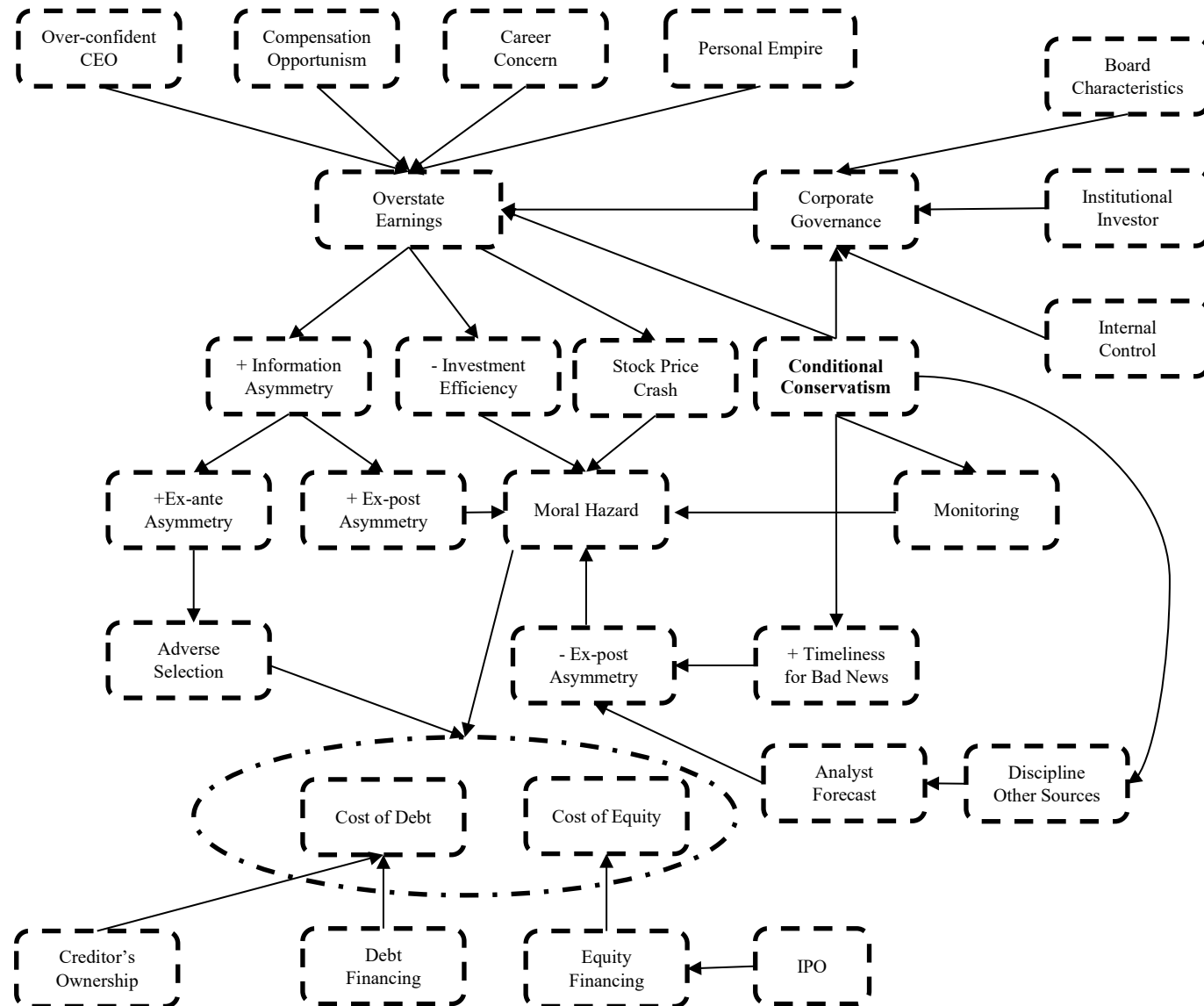
## **2.6 Causality flow from conservatism to firm value**

The causality flow from conservatism to firm value arises from motivations, the relation map, and the consequence of conservatism discussed earlier in this thesis. Conditional conservatism can improve the quality of accounting information in two ways. First, it makes it more difficult for the manager to overstate the earnings by setting a higher threshold for verifying the good news (Basu, 1997). Second, conditional conservatism can suppress the motivation of the manager to withhold bad news and even speed up the disclosure of bad news (Givoly and Hayn, 2000). Conditional conservatism improves earnings quality and thus can better discipline other information sources such as financial analysts (Bandyopadhyay et al., 2010). As a result, conditional conservatism improves the overall information environment of the enterprise. In the pre-contract phase, declining information asymmetry due to conditional conservatism can lead to the lower likelihood of adverse selection. In post-contract phase, conditional conservatism strengthens the principal's ability to monitor the agent's work to reduce the risk of moral hazard. In the setting of the repeated game, conditional conservatism lightens the company's cost of capital and eventually positively affects the enterprise's value.

Therefore, the sequence of the primary causality line from conditional conservatism to firm value is as follows: 1) conditional conservatism positively affects earnings quality (Kim and Kross, 2005; Bandyopadhyay *et al.*, 2010); 2) conditional conservatism positively affect the firm's internal and external information environment (Louis, Lys and Sun, 2014); 3) conditional conservatism facilitates stronger monitoring (Ahmed and Duellman, 2007); 4) conditional conservatism reduces the moral hazard (Kim and Zhang, 2013; Francis and Martin, 2010; Kravet, 2014; Lara, Osma and Penalva, 2016; Francis, Hasan and Wu, 2013); 5) conditional conservatism reduces the likelihood of adverse selection (Kim *et al.*, 2013; Hui, Matsunaga and Morse, 2009); 6) conditionally conservative accounting reduces the cost of capital

(Lara, Osma and Penalva, 2011; Ahmed *et al.*, 2002; Zhang, 2008); and 7) conditional conservatism positively affects firm value (Louis, Sun and Urcan, 2012; Ahmed and Duellman, 2011). Based on what has been discussed above, the main causality line can be established.

**Figure 2.6.1: Primary causal diagram for current conservatism literature**



(Source: Author)

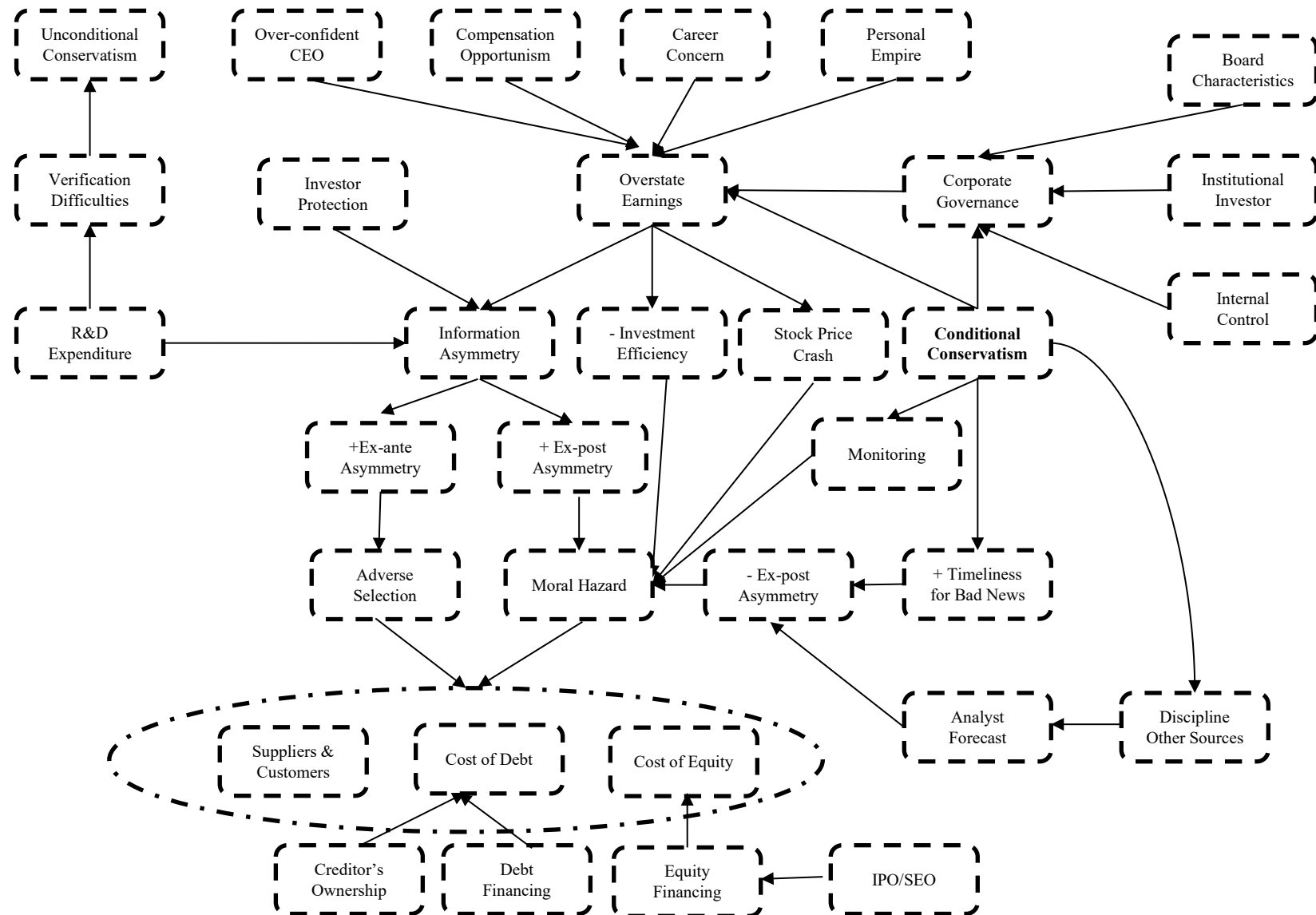
In addition to the main causality line which focuses on the efficient contracting theory, scholars also pointed out a few other logical branches. Hui, Klasa and Yeung (2012) argued that conditional conservatism can positively affect the perceptions of firm's customers and clients, which results in better performance of the company. LaFond and Watts (2008) suggested that conditional conservatism can also decrease the possibility of insider trading, and thereby reduce the information asymmetry between informal contracting parties. Both additional causality links share the same direction with the efficient-contracting story, that is, conditional conservatism positively impacts firm value.

The figure also needs to contain the causality relating to unconditional conservatism, which is mainly discussed by Beaver and Ryan (2005). Expenditure, such as research and development (R&D) and advertising, incurred by most of the intangible assets formed internally are expensed, which gives rise to unconditional conservatism. As aforementioned, few empirical studies investigate either cause or consequence of unconditional conservatism. Qiang (2007) is one exception who evaluates the determinants of both conditional and unconditional conservatism within the framework provided by Watts (2003).

The figure below demonstrates the whole causality flow of current literature on conservatism, which covers most arguments of existing studies. Each arrow connects a pair of cause and consequence with the arrow direction indicating causality. The three rectangles encircled by a dashed oval are the factors that directly affect the firm value. Thus, this thesis observes an unbroken causality chain from conditional conservatism to firm value, which is also one of the main contributions of this thesis.

As this thesis mentioned earlier, the articles which discuss the consequences of conditional conservatism assume that ineffective contracting schemes will not be eliminated immediately by the market. Along with the progress of evolution, companies overall become more conservative. Therefore, at each observed time point, the variance in the degree of conservatism among different companies is the difference in company efficiency. This assumption contradicts the argument of an efficient market with rational players. In an efficient market, the firm value can, in turn, affect the firm's choice of its conditional conservatism level. As a result, the causal chain becomes a closed loop. Moreover, given the business, Darwinian law would eliminate inefficient companies, and the financing costs (the oval-shaped part) would ultimately affect the conservatism of the surviving company.

**Figure 2.6.2: Causal diagram for current conservatism literature**





(Source: Author)

## **2.7 Analysis for the influence of Chinese IFRS convergence on conservatism based on causality flow**

In the end of section 2.4, this thesis utilizes the relationship map to analyze the impact of the Chinese new standards and find that the IFRS convergence in China will affect the demand of the shareholders and debtholders for conservatism. In order to further study the influencing factors of IFRS convergence on the demand for conservatism, a causality flow of conservatism is established in section 2.6 based on the relationship map. This section will analyze and discuss the specific impact of the IFRS convergence (section 2.7.1) and establish a causal diagram for Chinese IFRS convergence on conservatism (section 2.7.2).

### **2.7.1 Effects of China's IFRS adoption**

China's new accounting standards implemented from January 1 2007 focuses on improving the accounting information quality and strengthens the concept of providing useful accounting information for decision-making by investors and the general public. In addition to adapting to Chinese socialist market economy, the new accounting standards are convergent with international financial reporting standards to satisfy the demands of China's economic globalization.

International convergence of China's standards will increase the comparability and quality of financial reporting on a global scale. Some studies have confirmed that the accounting standards convergence reduced the discrepancies in financial reports from different countries and promoted cross-border investment (DeFond et al, 2011, Gordon et al, 2012, Jones and Finey, 2011, Barth et al, 2012). Moreover, some literatures focusing on the accounting information quality proved that the quality of information disclosure (Daske and Gerbhard, 2006) and earnings information content (Landsman et al. 2012) improved after the convergence.

#### ***Improved accounting information quality***

China's new accounting standards emphasized the requirements for the quality of accounting information. In addition, the new basic standard highlights the goals of financial accounting: providing users (including investors, creditors, governments and related departments, and the general public) of financial reports with accounting information related to an enterprise's financial situation, cash flows and operating results; reflecting the performance of the enterprise's management responsibilities; and helping users of

financial reports to make economic decisions.

Compared to former standards, the new standards have more comprehensive and detailed requirements for accounting information. In addition, China's Ministry of Finance has also published the "Accounting Standards for Business Enterprises - Application Guide" and "Explanation on Accounting Standards for Business Enterprises". These publications include not only the addition and revision of specific accounting standards, but also the formats of various financial statements and consolidated financial statements, and the "accounting and main accounting processing" in line with the new standards. These changes are conducive to improving the accounting information quality.

### ***Improved comparability of accounting information***

The new standards, originating from the fact that China's market economy has gradually matured, draw on international practices as much as possible to converge with IFRS. The IFRS convergence has effectively narrowed the gap between China's accounting standards and international accounting standards and improved the degree of comparability between the accounting information of Chinese companies and various other companies in the world. Therefore, the implementation of the new accounting standards system will greatly improve the comparability of Chinese public enterprises' accounting information with the Hong Kong market, European and other overseas markets, which is more conducive to cross-border comparisons and investment.

### ***Improved capital market development***

The improvement and development of the capital market is the internal driving force for the reform of accounting standards. In recent years, China's capital market has developed rapidly with more than 1,300 listed companies. The effectiveness of China's securities market is constantly improving. This has increased the need for the disclosure of accounting information, as well as the quality of accounting information.

Moreover, high-quality corporate accounting standards are a necessary guarantee for the adequate and effective disclosure of accounting information in a well-functioning capital market. The new accounting standards have directly led to the full disclosure of accounting information and have improved the quality and content of accounting information. Under the new standards, a large amount of relevant information can be easily communicated to the outside world, which not only helps investors make better decisions, but also promotes the efficient operation of the capital market.

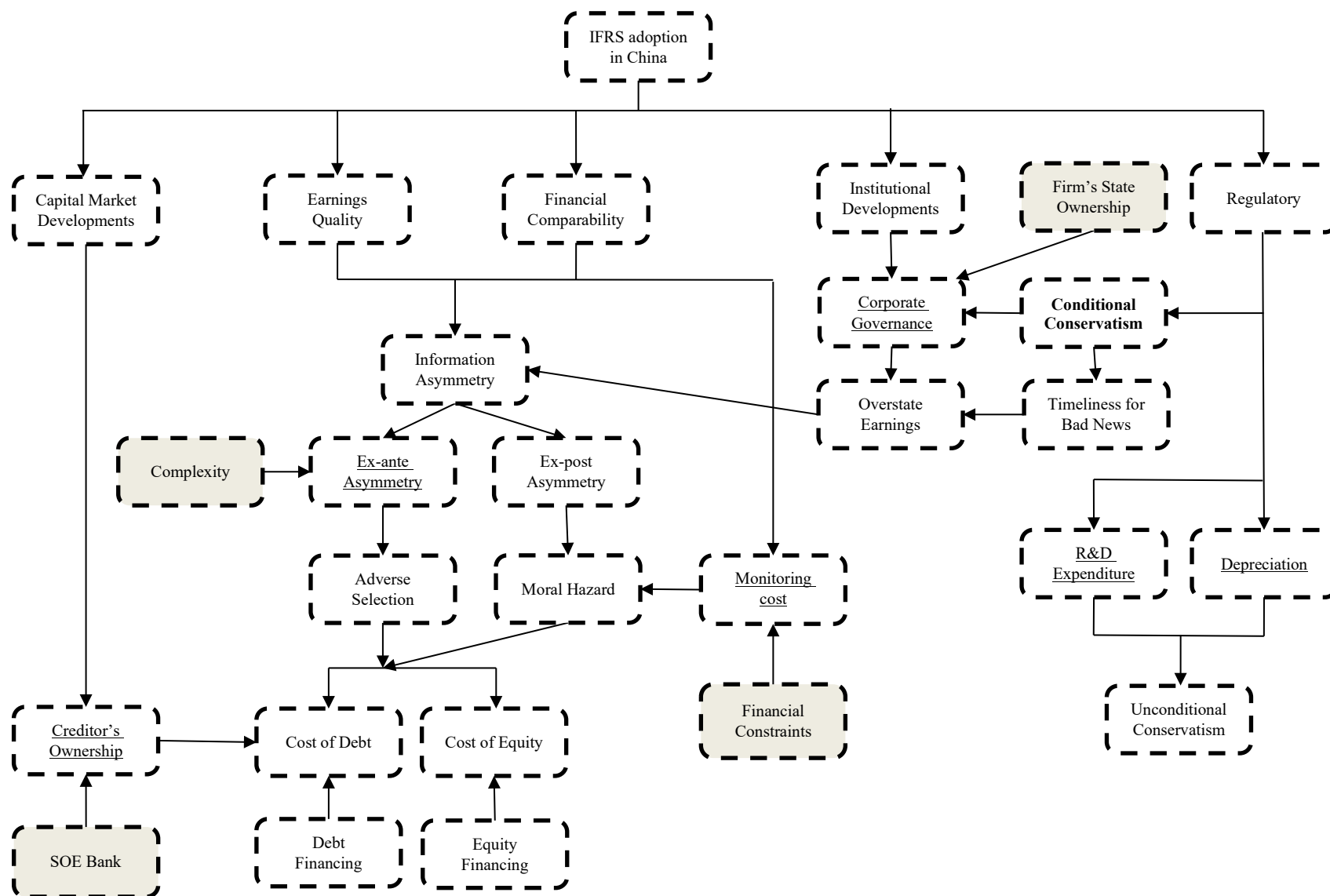
### ***Institutional development***

Under former Chinese accounting standards, the unreasonable and low transparency in the disclosure of accounting information intensified the information asymmetry between the investor and the company management. The new accounting standards adopt information-disclosure methods in line with international standards, and have a better quality of information disclosure, therefore improving corporate governance. Most of the research conclusions proved that high-quality accounting information disclosure can objectively and truly reflect the corporate governance objectives and performance. Therefore, there is an interactive correlation between accounting standards and governance: on the one hand, the disclosure of accounting information promotes the optimization of corporate governance; and on the other hand, corporate governance is conducive to improving the quality of accounting information (Zhu and Cheng, 2006).

#### **2.7.2 Impacts of Chinese IFRS–adoption on conservatism**

The causal flow and the effect on the conservatism of Chinese IFRS–adoption is shown in the figure below. With improved quality, comparability, and transparency of accounting information disclosure, IFRS-based accounting standards could alleviate the information asymmetry between different contracting parties and could also mitigate the monitoring costs of debt between the agent and principal.

**Figure 2.7.1: Causal diagram for this research model**



(Source: Author)

### ***Improved disclosure environment***

After the convergence, improved quality of information disclosure and earnings information content will significantly improve the disclosure environment of China's capital market, which will alleviate the information asymmetry between companies and external stakeholders. Information asymmetry is a major cause of external stakeholders' demand for conservative financial reports. Therefore, it is foreseeable that IFRS-based standards will ultimately alleviate companies' information asymmetry, and the improved disclosure environment moderates demand for accounting conservatism.

### ***Firm's State Ownership***

Compared to non-State Owned Enterprises (non-SOEs), State Owned Enterprises (SOEs) have lesser incentives to disclose information to outsiders. Since CEOs of SOEs are usually former or current bureaucrats in Chinese government, Fan et al. (2007) found that these CEOs' compensation and promotion may be evaluated more by various social and political factors than by financial and operating performance. Moreover, SOEs enjoy the government's implicit insurance (Cull & Xu, 2000). If the politically beneficial SOEs fall into financial difficulties, SOEs can turn towards the government for financial assistance. Therefore, there should be sufficient distinctions between SOEs and non-SOEs in the effect of IFRS-based standards on the need for conservative financial reports.

### ***Reduced monitoring costs***

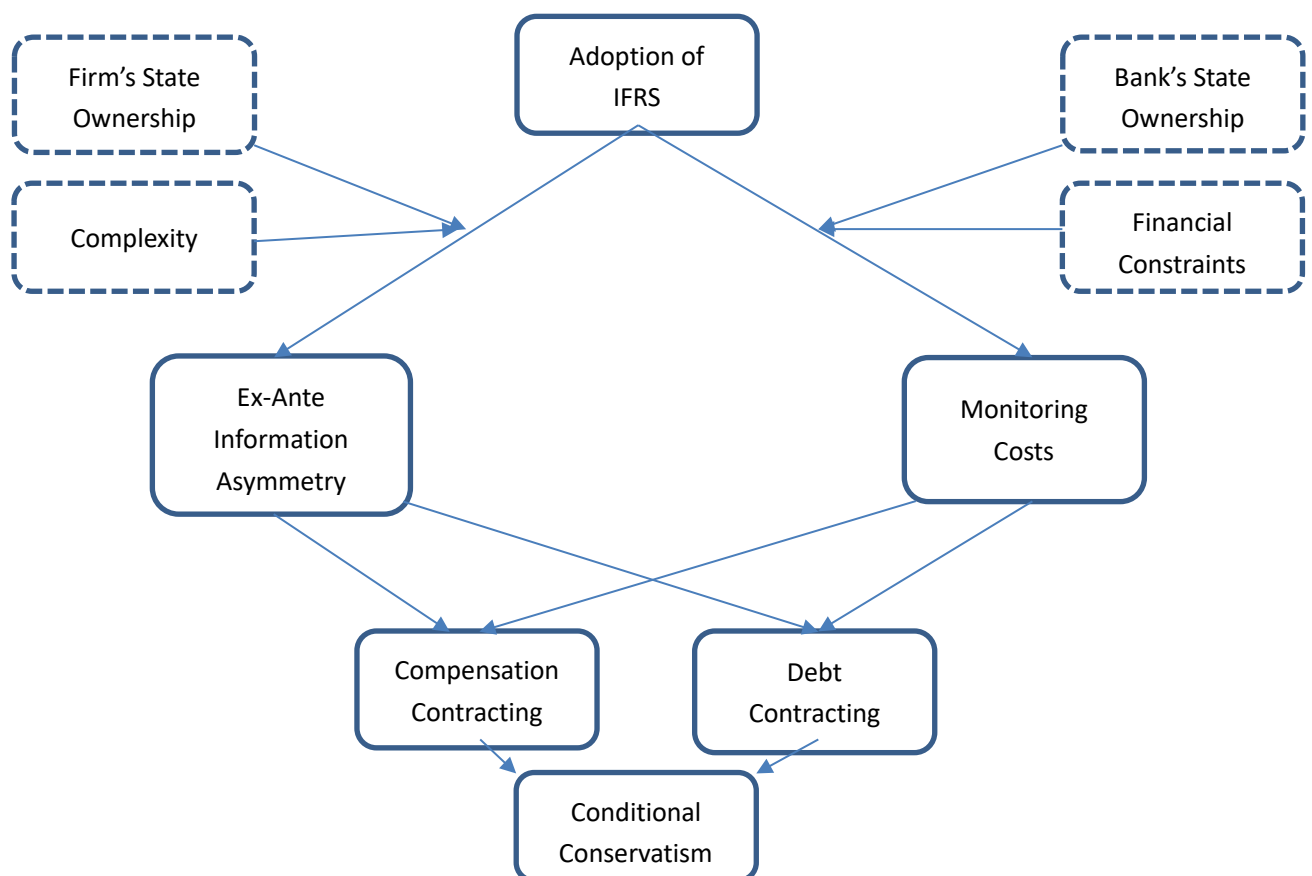
In China, new standards may also decline principals' (debtholders) needs for bad news by reducing the monitoring costs of debt. In this case, the monitoring costs of debt refer to the cost of principal monitoring and guaranteeing that the agents can actually perform the contract. Therefore, Jayaraman & Shivakumar (2013) found that lower monitoring costs would make the principal more inclined to directly monitor the agent's work than to employ incentive agreements. Due to decreased monitoring costs, debtholders, especially the banks, will be motivated to exercise their control rights on firms' operation and directly supervise companies' management. Thus, debtholders will demand for less conservatism after Chinese

IFRS convergence.

### ***Bank's State Ownership***

It is also driven by the fact that most banks are controlled by the government which is more concerned with politics than commerce. Thus, given the low level of incentives for monitoring borrowers, banks owned by the Chinese state will have lower demands for conservative financial reports. Therefore, non-SBs (non-State-owned Banks) and SBs (State-owned Banks) have different needs to secure sufficient net assets to repay loans.

***Figure 2.7.2: Estimation model for China's IFRS – adoption on conditional conservatism***



(Source: Author)

Figure 2.7.1 demonstrates the causality flow of the effect of China's IFRS adoption on conservatism. As conditional conservatism varies depending on the changes in stakeholders' demand, this thesis focuses on studying the impact of IFRS-based standards on the demands for conditional conservatism. It can be found from figure 2.7.1 that four main factors affect the demand for conditional conservatism: ex-ante information asymmetry, monitoring cost, corporate governance, and creditor's ownership. Dashed ovals are the proxies that can measure these four main factors affecting the demand for conditional conservatism. Since this study focuses on the impact of IFRS-based standards on the demand for conditional conservatism, This thesis use the watts-based framework (contracts, litigation, regulation and taxation) to simplify the figure 2.7.1 to figure 2.7.2, which can make the factors this thesis will study clearer and more pronounced. These impacts of new standards on the changes in demands for conditional conservatism will be further discussed in the hypothesis section. Differing from the conditional conservatism, changes in unconditional conservatism are directly affected by the change in standards.



# Chapter Three: Application of accounting conservatism measurement methods in China

## *The efficiency of the Chinese share market and its impacts on the applicability of accounting conservatism measurement methods*

One of the most important features of the capital market in China, affecting the application of accounting conservatism measurement methods in China, is the relatively low level of market efficiency in the Chinese share market. Market efficiency refers to the degree to which market prices of assets reflect all the available information. This concept was first developed by Eugene Fama who categorised market efficiency into three levels: strong-form efficiency, semi-strong form efficiency, and weak-form efficiency (Fama, 1970). Based on this theory, market efficiency refers to the ability of the share market to incorporate new information. The different degrees of market efficiency have different implications depending on the degree to which available information is incorporated in share prices. In a weak-form efficient share market, share prices reflect information contained in the historical prices of the share; in a semi-strong form efficient market, share prices reflect all the publicly available information; in a strong-form efficient market, share prices reflect both publicly and privately available information (Ogden et al., 2003).

Due to the many regulatory restrictions in the Chinese stock market, such as the segmentation of the stock market into A and B shares, the overwhelmingly dominant role of the banks in Chinese financial system and the existence of non-tradable shares in the Chinese stock market prior to the stock market reform in 2006, it was generally believed that the Chinese stock market is much less efficient than mature stock markets, e.g. the US and the UK. With research evidence showing that the share market in China is not even weak-form efficient according to Fama's (1970) efficient market hypothesis (EMH). For example, studies such as that of Mookerjee and Yu (1999), Darrat and Zhong (2000), and Seddighi and Nian (2004) tested the efficiency of the stock market in China and proved that the Chinese stock market was not weak-form efficient. Moreover, there was also evidence to suggest that the efficiency

of the Chinese stock market has been improving as a result of improvements in the effectiveness of market regulation and liquidity. For example, in a longitudinal study using China's share market data between 1992 and 2001, Li (2003) proved that the efficiency of the Chinese stock market has been gradually improving over this period.

For the period between 2000 and 2010, which is the focus of this study, Chong et al. (2011) investigated the profitability of various trading strategies in the Chinese share market and found empirical evidence confirming the weak-form efficiency of the Chinese stock market since the split share reform in 2006. On the other hand, Chen et al. (2010) found that the efficiency of the Chinese stock market was still significantly weaker than the US stock market, pointing to persistent mispricing in the Chinese stock market. In one of the latest studies on the efficiency of the Chinese stock market, Carpenter et al. (2014) found evidence proving that the efficiency of the Chinese share market has been increasing steadily in terms of share price informativeness after a series of structural reforms.

The efficiency of the Chinese stock market has significant implications for accounting conservatism measurement methods that incorporate market-based measures, e.g. the market value of equity, share return and earnings response coefficient (ERC). Such accounting conservatism measurement methods include the net asset measurement method, the earnings and accruals measurement method based on earnings persistence, the earnings-share return measurement method and the event research measurement method. Apart from the net asset measurement method, all of these accounting conservatism measurement methods are developed based on the Basu model, which is designed to capture conditional conservatism and is heavily reliant on efficient market hypothesis. The measurement methods for conditional conservatism were discussed in the method chapter, i.e. the earnings persistence measurement method, the earnings-share return measurement method, and the earnings response measurement method, all measure conservatism in terms of the asymmetric timeliness in recognising good earnings news and bad earnings news.

The assumption underlying these conditional conservatism measurement methods is that the

stock market is efficient in the sense that share returns reflect all publicly available news in a timely and efficient fashion. Based on this assumption, bad earnings news and good earnings news are symmetrically reflected in stock prices and share returns. This means that any asymmetry in the timeliness with which bad/good earnings news that is reflected in share returns is purely a result of conservatism in financial reporting practices. Thus, it makes the measurement of asymmetry in the timeliness with which bad/good earnings news is reflected in share returns a viable model of measuring conditional conservatism. Given the link between share market efficiency and the symmetry in the timeliness with which earnings news is reflected in share returns, understanding the efficiency of the Chinese stock market is of great significance if conservatism measurement methods relying on the efficient market hypothesis are to be applied in measuring Chinese A share market.

### **3.1 Factors that have influenced the efficiency of the Chinese stock exchange and their implications for conservatism measurement methods**

#### **3.1.1 Restrictions to trade in A shares and B shares**

The stock market in China was first developed in the early 1990s as part of the market reform of the Chinese economy. In order to attract international capital flow while avoiding their adverse impacts, the Chinese government implemented a two-class share market system in both Shanghai and Shenzhen stock exchanges, both of which trade two separate classes of shares, A-shares and B-shares. A-shares are only available to the residents and legal persons in the People's Republic of China, excluding Hong Kong and Macau. On the other hand, the B-share is settled in Hong Kong dollars or US dollars and is only available to foreign investors.

There was also mixed evidence regarding the efficiency of the Chinese share market with regards to the A-share and B-share market. For example, Wang et al. (2004) found evidence indicating that the A share market (available only to domestic investors) is weak-form

efficient, while the B-share market (available only to foreign investors) is not. The reason for this, according to Li (2003), is that domestic investors in China's A-share market have better access to information than foreign investors in the B-share market.

In February 2001, the Chinese government decided to relax the rules, preventing domestic investors from trading in B shares, and allow foreign investors to trade in the A-share market on a limited scale. The elimination of the restriction to trade in A-share and B-share markets has helped to improve the efficiency of both the markets, according to empirical findings from Chan et al. (2006) and Fifield and Jetty (2008). Prior to the elimination of this restriction, investors in both A-share and B-share markets faced constraints in accessing market information. From the perspective of domestic A-share investors, because of the Chinese government control over the media in China, their access to market information is restricted and incomplete; from the perspective of foreign B-share investors, their lack of understanding about the particular economic and business environment in China, as well as the difficulty of accessing information about domestic companies, meant that it was often more difficult for them to access information about Chinese companies who were listed on the B-share market (Hung, 2009). According to the empirical findings of Fifield and Jetty (2008), the lifting of the restrictions to trade A-shares and B-shares has had a positive effect on the pricing efficiency of both Chinese A-share and B-share markets as it has helped both domestic and foreign investors to get more complete company and market information and improved the speed with which information is distributed to investors. Importantly, Hung (2009) tested the efficient market hypothesis (EMH) in Chinese A-share and B-share stock markets both before and after the release of the restrictions to trade in A-shares and B-shares and found that only A-shares traded in Shanghai Stock exchange met the criteria for weak-form EMH prior to this regulatory change, while A-shares and B-shares traded in both Shanghai and Shenzhen stock exchange were found to be weak-form efficient after the regulatory change. Hung's (2009) finding offers significant evidence regarding the improvement in the efficiency of the Chinese share exchange following the release of the restrictions to trade A-shares and B-shares in the Chinese share market.

In particular, deBondt et al. (2010) used a fundamental-based model to investigate booms and busts in China's stock market from 2000 to 2009, and found evidence suggesting that the A-shares market was weak-form efficient after 2005, while the B-share market was not efficient. They suggest that this was because of the greater size and trading volume of the A-share market, leading to significantly better market liquidity and in turn higher efficiency in price discovery. Huang et al. (2008) and Beltratti et al. (2012) also found similar results confirming the superior efficiency of the A-share market. Thus, for the objective of this thesis, market-related data, e.g. share price and share return, will be obtained from companies listed in the A share market.

### **3.1.2 Transformation of non-tradable shares into tradable shares (split share reform)**

The Chinese share market is unique in its large number of state-owned enterprises (SOEs) listed on Chinese stock exchanges. When the Chinese stock market was first established in 1990, the overwhelming majority of the Chinese corporate sector was comprised of SOEs. As these SOEs became listed companies on the stock market, state ownership in these companies was diluted. In an effort to retain control of SOEs after they became listed companies, the Chinese government devised a special class of shares, known as non-tradable shares, which entitled its owners to the same rights of ordinary shareholders but could not be traded publicly. Non-tradable shares in the Chinese share market were typically owned directly by the Chinese government or by financial institutions that were ultimately owned by the Chinese government.

The segmentation of tradable and non-tradable shares in the Chinese share market created a host of problems and adversely affected the efficiency of the Chinese share market. Because holders of non-tradable shares could not directly trade their shares on the open market to earn profits, they were incentivised to make profits by tunnelling funds from listed companies or embezzling state assets, leading to poor corporate governance (Feng et al., 2005). Furthermore, the presence of a large number of non-tradable shares significantly constrained

the liquidity of the Chinese share market, adversely affecting the stock market's efficiency in price discovery, which in turn affected the efficiency with which share prices reflect available information (Genevieve and Wei, 2005). At the end of 2005, as much as two thirds of the shares listed on the Chinese share market were non-tradable, thus severely compromising the liquidity of the Chinese share market, which in turn adversely affected its efficiency (Mattlin, 2007).

In April 2005, the China Security Regulatory Commission, the official regulator of the Chinese share market, announced the turning of non-tradable shares into tradable shares. This transformation process was known as the 'split share' reform, and was completed by the end of 2006, by which time all non-tradable shares were transformed into tradable shares (Beltratti et al., 2016). The elimination of non-tradable shares significantly improved the efficiency of the Chinese share market as it allowed for better opportunities for investors to share risks and offer higher and more stable market liquidity. For example, using the Chinese stock market data from 2006 to 2015, Beltratti et al. (2016) found empirical evidence showing that efficiency of the Chinese share market had been improving since the split share reform. In particular, Beltratti et al. (2016) found that there was no existence of valuation errors with regards to the market value of public companies in both Shanghai and Shenzhen stock exchanges and suggested that the Chinese share market became weak-form efficient after the split share reform. Similarly, focusing on the A share market, Yi and Liu (2011) found empirical evidence supporting the weak-form efficiency of the Chinese share market and improvements of market efficiency after the split share reform.

### **3.1.3 Lift of the ban on short selling**

Short selling was banned in the Chinese share market until 2010. This ban likely had adverse impacts on the efficiency of the Chinese share market, particularly in relation to market valuations (Chang et al., 2014). Many researchers believed that restrictions on short selling adversely affected market efficiency. Diamond and Verrecchia (1987), for example, found that constraints on short selling hinders price discovery in stock markets, especially in relation to

negative information. Comparing international stock markets with different rules regarding short selling, Bris et al. (2007) measured the loss of market efficiency as a result of short selling constraints and found that negative information is reflected in prices more efficiently in markets where short selling practices are allowed. Similarly, Saffi and Sigurdsson (2011) found that price efficiency is higher in markets with less restriction on short selling.

Given the large body of empirical studies confirming the negative impacts of short selling constraints on market efficiency, particularly the efficiency with which negative news is incorporated in stock prices, it can be expected that the long-standing ban on short selling in the Chinese share market prior to 2010 had negative impacts on the efficiency of the Chinese share market, especially the efficiency with which negative information was reflected in firms' shares prices and market values. When the ban on short selling in China's share market was lifted in 2010, market efficiency was expected to improve. In support of this hypothesis, Chang et al. (2014) investigated the changes in the efficiency of the Chinese share market after the ban on short selling was lifted. They found that short selling activities helped to improve market efficiency by eliminating over-pricing more efficiently. Therefore, the release of the ban on short selling in the Chinese share market significantly improved the efficiency of the Chinese share market, especially with regards to incorporating negative news in share prices and market valuations, according to the empirical findings of Chang et al. (2014).

### **3.2 Implications of China's share market efficiency for the application of conservatism measurement methods in China**

At present, there are five main categories of the measurement method in accounting conservatism in the research literature: net assets measurement method; earnings and accruals measurement method; earnings–share return measurement method; accrual–cash flow measurement method; and event research method. Table 3.1 presents these methods with the relative literatures. Before discussing the suitability of these methods in China, it is first necessary to understand these methods. However, for the convenience and fluency of reading, and to reduce the amount of repetitive discussion on methods, the methods used in this study

will be reviewed and discussed in detail in the respective method sections. For example, the Accrual – cash flow method and Basu method used to detect conditional conservatism will be discussed in Section 5.1 and 5.2: Method development for measuring conditional conservatism, and the BTM method used to test unconditional conservatism will be discussed in Section 5.6: Method development for measuring unconditional conservatism, while other methods will be discussed in the appendix. To understand other methods or for questions about certain methods during the discussion, please refer to Appendix-Methods Review.

**Table 3.1 Conservatism measurement method**

Categories of measurement method	Specific indicators or method	Representative literature
Net assets measurement method	Valuation model	Ahmed (2001) Feltham - Ohlson (1995)
	The market value to book value ratio (MTB)	Beaver and Ryan (2000)
Earnings and accruals measurement method	Earnings persistence	Basu (1997) Brooks and Buckmaster (1976)
	The degree of skewness and fluctuation of earnings and accruals	Ball et al. (2000)
	Cumulative accrual	Givoly and Hayn (2000)
Earnings – share return measurement method	The ratio of regression coefficients of earnings on the ‘good news’ to ‘bad news’	Basu (1997), Khan and Watts (2009)
	The ratio of $R^2$ of earnings on the ‘good news’ to ‘bad news’	Pope and Walker (1999)
Accrual – cash flow measurement method	The ratio of regression coefficients and $R^2$ of accrual on the ‘good news’ to ‘bad news’	Ball et al. (2005)
Event research method	Earnings response coefficient measurement (ERC)	Basu (1997)
	Share returns measurement	McNichols (1988)

(Source: author)



While there are a host of different measurement models for conservatism, the assumptions underlying these methods, as well as their limitations, should be considered in relation to the particular features of the share market in China when applying them to measure conservatism in the financial reporting of listed companies. Therefore, the following sections discuss special features of the capital market in China, such as the efficiency of the Chinese share market, as well as the applicability of these accounting conservatism measurement methods by analysing how features of the share market in China affect the assumptions, limitations, advantages, and disadvantages of the accounting conservatism measurement methods in a Chinese context.

### **3.2.1 Implications for unconditional conservatism measurement methods**

#### ***3.2.1.1 Valuation model measurement method***

The valuation model method, which is summarised from the study of Feltham and Ohlson (1995), measures unconditional conservatism in firms' accounting policies by looking at how conservative accounting policies affect the operating assets. In the valuation model, the market value of a firm is a linear function of abnormal operating earnings, operating assets at the beginning of a period, capital expenditures, or current investments in the operating assets (Ahmed et al., 2002). Therefore, the assumption underlying this method is that the share market is efficient in correctly pricing the value of a firm based on its abnormal operating earnings, operating assets, capital expenditures or current investments. Given that both A-share and B-share investors face constraints in accessing company and market information prior to the release of the restrictions to trade in A-shares and B-shares, the lack of efficiency in the Chinese share market prior to the release of the restrictions to trade in A-shares and B-shares meant that investors might not have all the information they need to correctly price a firm's value based on its abnormal operating earnings, operating assets, capital expenditures or current investments. Following the release of the restrictions to trade in A-shares and B-shares, the effectiveness of this measurement method is likely to improve with better market efficiency. Prior to 2005, the significant proportion of non-tradable shares in the

Chinese share market also adversely affected its efficiency in price discovery as a result of poor liquidity, while the ban on short selling before 2010 limited the efficiency with which negative information was incorporated into share prices. All of these factors are likely to adversely affect the effectiveness of the valuation model method through their adverse impacts on the market's ability to efficiently incorporate information into a firm's value.

Although information on operating assets at the beginning of a period, capital expenditures or current investments in operating assets based on which the valuation model method is developed, are all readily and fully available to investors through mandatory financial reports, the constrained access to complete company and market information in China's stock markets is likely to have contributed to the lack of efficiency in China's stock market. In measuring unconditional conservatism, goodwill as the dependent variable in the valuation model method is susceptible to the lack of market efficiency in the pricing of firm values. Therefore, the valuation model method is influenced by market data through goodwill which is calculated by subtracting the book value of equity from the market value of equity.

### ***3.2.1.2 The implications for the book value-to-market value (BTM) ratio measurement method***

The BTM method measures unconditional conservatism by comparing a corporate's book value with its market value. Therefore, the level of conservatism is evaluated in terms of the degree to which the ratio of book value to market value of net assets is smaller than one. In particular, the bias component of the BTM ratio, which is caused by the phenomenon in which the book value of a company's assets is consistently lower than their market value, relates to accounting practices that persistently generate unrecorded goodwill and is ex-ante and news independent in nature and therefore captures unconditional conservatism. Since the BTM method relies on part of the ratio of book value to market value to measure the degree of unconditional conservatism, its effectiveness is inevitably subject to the stock market's efficiency in price discovery. In this regard, the efficiency of the Chinese stock market gradually improved with structural reforms (the release of restrictions to trade in A shares and B shares in 2001, the transformation of non-tradable shares into tradable shares in 2005, and

the lift of the ban on short selling in 2010). The significant obstacles to market efficiency before these reforms meant that the effectiveness of the BTM method to measure the level of unconditional conservatism in the financial statement of Chinese public enterprises was curtailed to various degrees from 2001 to 2010.

### **3.2.2 Implications for conditional conservatism measurement methods**

#### ***3.2.2.1 Earnings and accruals measurement model***

This measurement method is based on the theory that accounting conservatism causes accruals to be asymmetric as gains are only partially accrued and losses are fully accrued, and the capitalisation of future cash flows associated with losses means that losses result in significantly larger accruals than gains. Consequently, accounting conservatism will result in negative accruals and understated cumulated accruals, which can be used to measure conditional conservatism. There are three variants of this measurement method: one based on earnings persistence, one based on the skewedness and fluctuations of earnings and accruals, and one based on cumulative accruals.

The earnings persistence measurement method measures conditional conservatism through the asymmetric persistence between unexpected decreases and increases in earnings. On the other hand, the skewedness and fluctuations of earnings and accruals measurement method measures conditional conservatism through the asymmetric incorporation of economic income into accounting income. Both the methods are developed from the Basu model, and thus rely heavily on the efficient market hypothesis, as the market price of a firm's shares is central to the models used in both measurement methods. Therefore, the applicability of these two variants of the earnings and accruals measurement method in China is influenced by the efficiency of the Chinese share market, with their effectiveness expected to improve as the efficiency of the Chinese share market improved from 2001 to 2010.

On the other hand, the cumulative accruals variant of the earnings and accruals measurement method measures conditional conservatism through the correlation between accounting accruals and earnings. This variant of the earnings and accruals measurement method is not reliant on the efficient market hypothesis like the other two variants, as accounting earnings accruals are independent of market prices. Therefore, the applicability of this variant of the earnings and accruals measurement method in China would not be affected by the significant changes in the efficiency of the Chinese share market from 2001 to 2010.

### ***3.2.2.2 Earnings-share return measurement model***

As the name suggests, the earnings-share return measurement method relies on the asymmetric timeliness of the incorporation of bad news and good news in earnings to measure the degree of conservatism. Based on the Basu (1997) model, this measurement method is heavily dependent on the efficient market hypothesis as the market price of a firm's share and share return play critical roles in the models underpinning this measurement method. Due to its reliance on market share price and share return, the applicability of the earnings-share return measurement method in China would be heavily influenced by the changes in the efficiency of the Chinese share market from 2001 to 2010, thus making it unreliable for measuring the conditional conservatism of Chinese public enterprises.

### ***3.2.2.3 Accrual – cash flow measurement model***

Accrual-cash flow measurement method measures conditional conservatism based on the theory that correlation between accounting accruals and current period cash flows is greater in periods when economic losses are recognised than in periods when economic gains are recognised. According to this method, the accrual process captures economic losses in a more timely fashion than economic gains. Therefore, the difference between the timeliness with which the accrual process captures economic gains and losses can be used as a measure of conservatism. Both accounting accruals and cash flows are independent from the stock exchanges. This means that unlike other conditional conservatism measurement methods, the

effectiveness of the accrual-cash flow measurement method for measuring conditional conservatism in China is not affected by the significant varies in the efficiency of the Chinese share market during the period of 2001–2010.

#### ***3.2.2.4 Event research measurement model***

The event research measurement method measures conditional conservatism through the differences in the timeliness / persistence with which bad /good news is reflected in earnings. There are two variants of this measurement method: the earnings response coefficient (ERC) measurement model and the skewedness of share returns distribution measurement model.

This variant of the event research measurement method measures conditional conservatism in terms of the degree to which share return distributions are more negatively skewed during earnings announcement dates than during non-earnings announcement dates. Because this variant of the event research measurement method relies mainly on share returns to measure conservatism, it also relies on the efficient market hypothesis, i.e. the share market needs to be efficient in the sense that investors are able to readily access information about a firm, either through firms' voluntary disclosure or investors' own discretionary information search during non-earnings announcement dates. The skewedness of share returns distribution measurement method is based on the assumption that the investors learn about the information of a firm through its voluntary disclosure and their own discretionary information search during non-earnings announcement dates. This assumption limits the applicability of this variant of the event research measurement method in China for the period 2001 to 2010, as the poor corporate governance before the split share reform in 2005 and the lack of complete information for both A and B share investors before 2001 severely handicapped investors' ability to fully learn about companies' information in the Chinese stock market. Therefore, this variant of the event research measurement method is not particularly suitable for measuring the conditional accounting conservatism of companies listed in Chinese share market during 2001– 2010.

The second variant of the event research measurement method, the earnings response coefficient (ERC) measurement method, is developed based on the Basu model and measures conservatism through the difference between earnings response coefficient for positive changes in earnings and the earnings response coefficient for negative changes in earnings. As the earnings response coefficient in this method captures the abnormal return per dollar from unexpected earnings, this method also relies on the efficient market hypothesis in the sense that it is based on the assumption that accounting conservatism, rather than market inefficiencies, would be responsible for causing the different market's reaction (measured by the earnings response coefficient) to good earnings news and bad earnings news. Therefore, in light of the significant changes in the efficiency of Chinese share market from 2001 to 2010, the effectiveness of this method would also be volatile during this period, making it unreliable as a measure of conditional conservatism for listed firms in China.

### **3.3 Selected measurement methods for conditional and unconditional conservatism in China**

#### **3.3.1 Selected measurement methods for unconditional conservatism in China**

From the analysis in section 3.2, it can be seen that the valuation model measurement method is also not appropriate for the purpose of measuring unconditional conservatism in China from 2001 to 2010 compared to the BTM method (Book value to Market value method). Both the BTM method and the valuation model measurement method are susceptible to the changes in the efficiency of the Chinese stock market. Both the BTM method and the valuation model are reliant on the efficient market hypothesis as the market value of firms is central to these methods. However, the BTM method is widely recognised and extensively used for measuring unconditional conservatism. Therefore, given the significant changes in the efficiency of the Chinese share market from 2001 to 2010, the BTM method is chosen as the measurement method for unconditional conservatism in China. Most importantly, the BTM method is superior to the valuation model method as has been fully discussed in lot of

previous researches, but far fewer studies employ the valuation model for measuring unconditional conservatism. Thus, although both the valuation model method and the BTM method incorporate market-based measures, for lack of a better model, the BTM model as a widely recognised method is still used for measuring unconditional conservatism.

### **3.3.2 Selected measurement methods for conditional conservatism in China**

From the analysis in section 3.2, it can be found that the accrual-cash flow model is more appropriate for evaluating conditional conservatism in China. Both accounting accruals and cash flows are independent from the stock market. This means that unlike other conditional conservatism measurement methods discussed in section 3.2, the effectiveness of the accrual-cash flow measurement method for measuring conditional conservatism in China is not affected by the significant changes in the efficiency of the Chinese share market during the period from 2001 to 2010. Therefore, this method is selected as the primary method for measuring conditional conservatism in China.

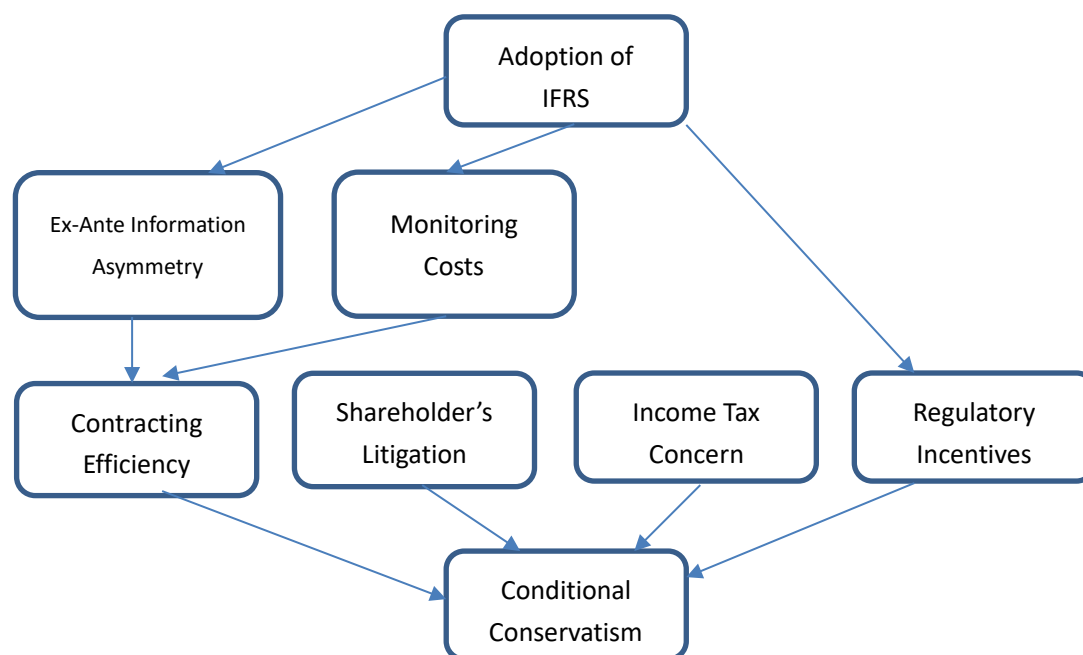
In addition, the earnings-share return measurement method, based on the Basu model, is selected as a complementary method for measuring conditional conservatism in China. Although the application of this method in China has limitations due to its reliance on the efficient market hypothesis, it provides a direct measure of how the stock market reacts differently to good/bad earnings news in China. Furthermore, Basu's work (1997) is widely recognised and extensively used for measuring conditional conservatism and the results of Basu's (1997) methods in previous researches are usually consistent with the accrual-cash flow measurement method. Therefore, Basu's (1997) methods are used as supplementary tests of conditional conservatism with an understanding of their limitations when applied to the Chinese share market, and increase comparability with other relevant research in China.

## Chapter Four: Hypotheses development for conditional and unconditional conservatism

### 4.1 Correlation between conditional conservatism and IFRS-based standards in China

The theoretical links between IFRS-based standards and firms' conservatism could be inferred from existing researches. Changes in the requirements of the standards directly affect firms' conservatism. It is, *a priori*, not clear whether Chinese public corporates are required to release more conservative financial reports under the new standard in China. On one hand, compared to former standards, the new ASBE in China are generally considered to be of higher quality and comparability and closer to IFRS, since the new ASBE is largely convergent with IFRS. On the other hand, due to the introduction of fair value model, IFRS-based standards will provide more room for companies to report less conservatively.

**Figure 4.1: Structural Estimation Model of IFRS Adoptions and Conditional Conservatism**



*(Source: Constructed by the Author)*

Besides the direct influence mechanism, the implementation of IFRS-based standards in China could influence the degree of conditional conservatism by altering the contract-related



settings. In particular, IFRS-based standards could improve transparency, alleviate the *ex-ante* information asymmetry among capital market participants, and mitigate the monitoring costs between the agent and the principal. Figure 4.1 shows the structural estimation model of IFRS adoptions and conditional conservatism. Following Watts' argument (2003), this thesis specifies four intermediate factors including contract, litigation, taxation, and regulation.

### ***Impact of IFRS Adoption on information management***

For a company adopting conservative accounting practices, there are a lot of explanations. Blunck (2013) argues that firms will adopt conservative accounting practices for a number of different reasons. However, only the contracting explanation is in line with the fact that human beings have already been performing conservative accounting ever since accounting came into being. The contract motivation argues that conditional conservatism can improve the efficiency of debt contracting, compensation contracting and corporate governance, and decline the cost of capital and agency conflict, being part of the efficient mechanism employed in the organization of the enterprise. Under contract theory, scholars have proposed two explanations for conditional conservatism: the role of governance and information.

The role of governance stems from the perspective of the principal (investors) – one who can utilize the principle of conservatism to restrict self-service behaviours of management. The governance role is supported by a lot of empirical evidence. For instance, conservatism can increase the investment efficiency (Lara, Osma and Penalva, 2016) or mitigate the overconfidence of the/a CEO (Ahmed and Duellman, 2013). Therefore, the improved disclosure environment can moderate a principal's demands for conservative accounting.

The role of information is another explanation based on the view of agency. This view holds that the company intends to alleviate the information asymmetry between the agency and the capital provider. The information role of conservatism is supported by Lafond and Watts (2008) who suggest that the enterprise is more inclined to issue a conservative financial report

in a business model with serious ex-ante information asymmetry. Chen et al. (2010) also follow the role of information to study the impact of debt contracts in China. The most important empirical interpretation for the information role is that the improved disclosure environment alleviates demands for conditional conservatism. However, there has been no research so far investigating the influencing mechanism between conservatism and IFRS convergence in China.

There is vast literature that analyses the causality that the IFRS-based standard in China alleviates the ex-ante information asymmetry between managers and external stakeholders by improving the disclosure environment. Existing empirical studies have scrutinised the correlation between IFRS adoption and economic consequences, for example, the analyst forecast (Byard et al., 2011), cost of capital (Li, 2010), or share return synchronicity (Beuselinck et al., 2009). A positive correlation has been found in these studies, indicating that IFRS not only improves comparability in financial reporting but also enhances companies' information disclosure environment and disciplines the financial intermediary industry.

The scenario of IFRS convergence in China is consistent with that in Europe. Due to more comparable accounting standards between them, Chinese public companies are becoming easier to screen and research for foreign investors. A cross-border Channel such as QFII (Qualified Foreign Institutional Investors) or the private takeover market is available to foreign investors to facilitate them in making investment decisions pertaining to Chinese enterprises. IFRS-based standards can improve their investment efficiency and encourage them to gather more information regarding Chinese public companies. This logic also applies to the financial intermediaries including M&A (Mergers and Acquisitions) advisors and financial analysts. Due to higher comparable accounting information, the financial intermediaries would have lower costs in processing related information and have more incentives to generate more useful information regarding public companies. Therefore, IFRS-based standards in China ultimately decreases ex-ante information asymmetry, which will moderate the demand for conditional conservatism.

### ***Impact of IFRS Adoption on Monitoring Costs***

In addition, IFRS adoption also mitigates principals' demands for bad-news by reducing monitoring costs of the principal. If the monitoring costs decline, the principal prefers to directly monitor agents' efforts rather than to utilize incentive agreements (Jayaraman & Shivakumar, 2013). IFRS adoption would mitigate principals' monitoring costs. First, as China's financial reform has progressed, its capital market has also gradually increased its level of openness and internationalization. The improvement of China's capital market is conducive to attracting more overseas funds to invest in the Chinese market and will need more foreign financial analysts. In addition, the entry of foreign financial analysts will place higher demands on information disclosure discipline. Second, more peer companies will improve the comparability of information. Third, IFRS-based standards would enhance other characteristics of the company's accounting information quality. Due to decreased monitoring costs, debtholders, especially the banks, would be motivated to exercise their control rights on firms' operations and directly monitor managerial performance. Thus, debtholders in China would have a lower demand for conservative financial reporting in the post-IFRS standards period.

In summary, it can be stated that IFRS convergence is negatively associated with the conditional conservatism of China's listed enterprises due to mitigated ex-ante information asymmetry and monitoring costs. The mechanism of ex-ante information asymmetry cannot be ignored during the sample period of this thesis. This is due to the serious ex-ante information asymmetry prior to IFRS adoption in the Chinese share market. It is also driven by the facts that the bank loan is main source of finance in China's market. Moreover, it is worth noting that most banks (debtholders) are controlled by the government in China and more concerned with politics than commerce. Thus, considering the low level of incentive for monitoring debtors, banks owned by the Chinese state would have lower demands for the conservative accounting of Chinese public enterprises than private banks. Given the aforementioned arguments, the following is the principle hypothesis of this thesis:

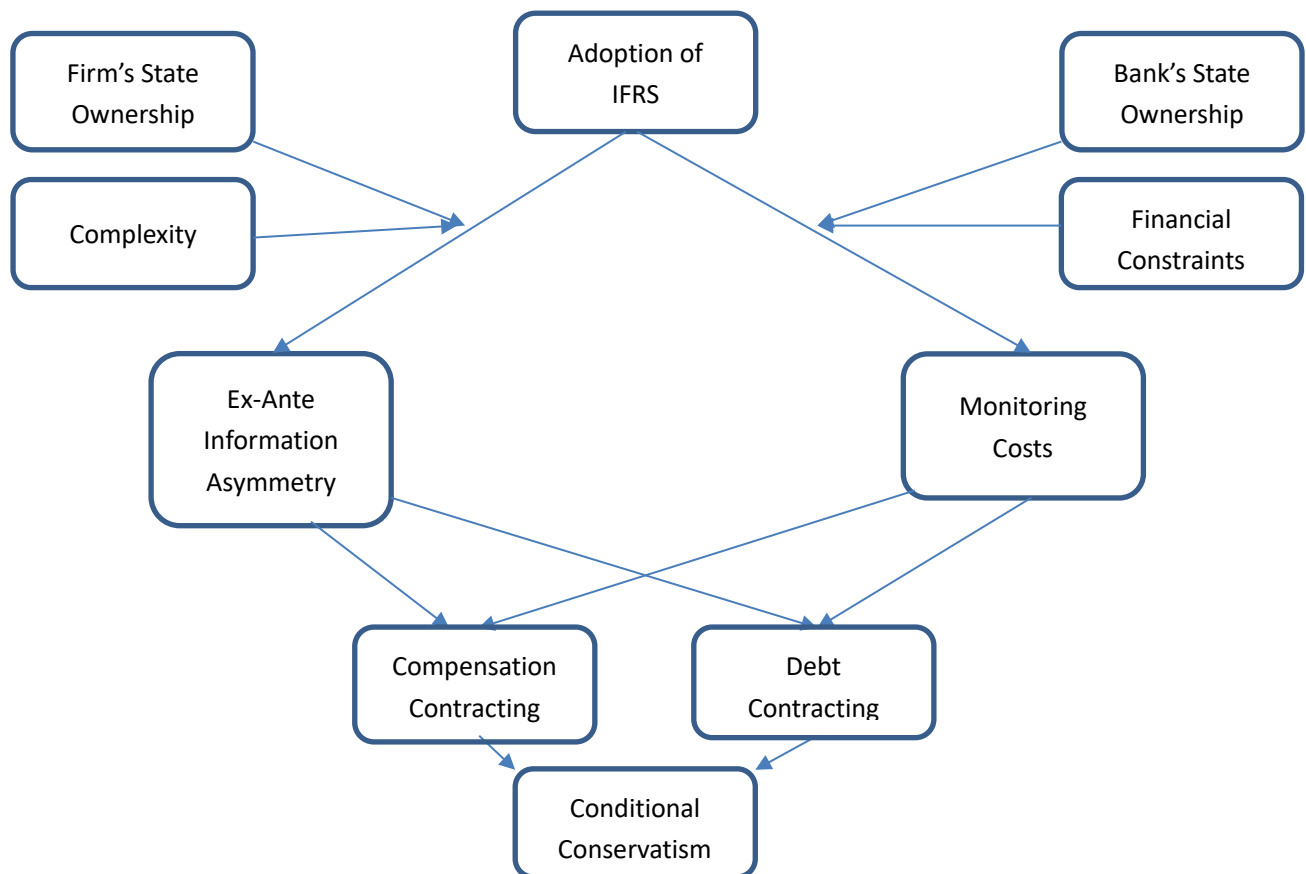
*H1: Chinese public companies employ a less conditionally conservative accounting policy in the post-implementation of IFRS-based standards in 2006.*

## **4.2 Influencing mechanism between IFRS convergence and Firms' conditional conservatism**

Both the regulatory and contracting theories could explain the first hypothesis. From the standpoint of policy makers and accounting scholars, it is more interesting to explore the detailed influencing mechanism between IFRS adoption and firms' conditional conservatism. Therefore, the second research question of this thesis pertains to the sources of reducing conditional conservatism in Chinese public enterprises after IFRS adoption.

The causality flow of effect of China's IFRS adoption on conservatism is discussed in section 2.7. Because conditional conservatism varies mainly depending on changes in stakeholder demand, this thesis focuses on studying the impacts of IFRS-based standards on demand change for conditional conservatism. It can be found that four main factors affect the demand for conditional conservatism: ex-ante information asymmetry, monitoring cost, corporate governance, and creditor's ownership. Figure 4.2 is helpful in identifying causality and complex relationship in this research.

**Figure 4.2: Structural Estimation Model with Moderating Effects**



*(Source: Constructed by the Author)*

As Figure 4.2 illustrates, this thesis relies on different types of contracts to distinguish the influencing mechanisms of information asymmetry and monitoring costs. Watts (2003) divides the contract into subgroups including compensation and debt contracts. Debt contracts could be further classified into public debtholders and private lenders, such as banks. Previous studies have shown that different contracting parties have different demands for firms' conditional conservatism. Debtholders have less information asymmetry; therefore, they have a stronger demand for conservatism. Their utility is more sensitive to firms' downward risk. As a result, firms' conservatism level is a function of information asymmetry, debtholder's monitoring incentives, and a firm's capital structure.

Under the view of conservatism's informational role, firms are expected to be more conditionally conservative with higher ex-ante information asymmetry. This thesis uses the complexity level of a firm's business model as an exogenous instrument of its ex-ante

information asymmetry. Given the assumption that the development of equity market's information environment after 2006 would mainly reduce the information asymmetry of complex firms, this thesis predicts that business complexity would moderate the influences of IFRS-based standards on conditional conservatism of public companies in China. Accordingly, the second hypothesis is as follows:

*H2: The implementation of new Chinese standards has a greater negative impact on companies with more complex business models in terms of conditionally conservative accounting than companies with less complex business models.*

Given the critical role of the companies' ownership in conditional conservatism (Chen et al. 2010), there should be sufficient differences between SOEs and non-SOEs in the decline of conditionally conservative accounting after IFRS adoption, pertaining to the change of demand for conservative accounting. Thus, under the condition of constant conservative accounting cost, this thesis expects that there is a correlation between cross-sectional differences in conservatism and the kind of ownership of public enterprises, i.e. whether the company is a non-SOE.

In China, SOE firms are more likely to access bank loans with the intention of compensating their inefficient operations (Wang et al., 2008). If the politically-advantaged SOEs fall into financial difficulties, they can turn towards the government for a bailout under the normality of the soft budget constraint. The Chinese government usually employs one or more of the following methods to bail out SOE firms: declining the tax burden, allowing debt-for-equity swaps, transferring debt burdens through asset management enterprises, and injecting capital to pay off part of the debt. In fact, the government has become a potential insurance provider for state-owned enterprises (Xu et al., 2005).

SOE firms also have less incentive to disclose information to outsiders (Fan et al., 2007). Since CEOs of SOEs often have work experience as bureaucrats in the government, their compensation and promotion are more dependent on various social and political goals than on financial and business performance. Due to the lack of a powerful motivation to enhance business performance, share-based compensation and clearly delineated profitability targets,

direct incentives to manage earnings are relatively lower for CEOs of state-owned enterprises. Different from SOEs, non-SOEs are unable to obtain the implicit insurance from the government and emphasise greater business performance (Cull & Xu, 2000).

Based on the above reasons, Chen et al. (2010) found that SOEs had less conditional conservatism than non-SOEs prior to IFRS adoption. However, with the improvement of China's capital market, more intense market competition and state-owned enterprise reform (improving management systems and regulatory systems of various state-owned enterprises), the difference between SOEs and non-SOEs is gradually decreasing, and their demand on conservatism tends to achieve a similar level. Therefore, SOEs partially offset the impact of IFRS adoption on reducing conditional conservatism. After following new Chinese standards, the reduction in the degree of conditionally conservative accounting is higher in non-state-owned enterprises compared with companies with state-owned enterprises.

Accordingly, the third hypothesis is as follows:

*H3: The implementation of Chinese new standards has a greater negative impact on non-state-owned enterprises in terms of conditionally conservative accounting than state-owned enterprises.*

Since the conditional conservatism demands from the firms with more severe financial constraints (high leverage) are primarily driven by debt holders, especially banks, and the monitoring costs of debt holders are reduced, it is reasonable to expect a moderating effect of financial constraints on these firms' conditional conservatism after the IFRS convergence. This thesis tentatively predicts that compared to the firms with less financial constraints that experienced a trivial change in conditional conservatism after IFRS convergence, financially constrained firms are more likely to recognise unrealised losses via accruals in a timelier manner than unrealised gains after 2006. Therefore, the fourth hypothesis is as stated below:

*H4: The implementation of new Chinese standards has a greater negative impact on firms with more financial constraints in terms of conditionally conservative accounting than firms with less financial constraints.*

Under the agency perspectives, an important function of public financial institutions is to make up for market failures, improve resource allocation efficiency and maximize social

welfare. Since targets of public financial institutions are often non-measurable and multiple, they usually have inefficient incentives (Tirole, 1994). State-owned banks (SBs) still allocate resources to projects with social benefits. However, there are not enough incentives in the contract, which leads managers in SBs to have less efforts (or divert more resources) than non-SBs. However, the political theory provides another perspective, arguing that politicians are usually self-interested and more inclined to achieve self-goals rather than maximize social welfare (Shleifer and Vishny, 1998). Based on this perspective, politicians will seek personal political goals rather than establish SBs to allocate financial resources to projects with social benefits, such as offering resources or jobs for political supporters or voters (Shleifer and Vishny, 1998). Therefore, both perspectives believe that SBs compared with non-SBs are less effective at and concerned with monitoring the default risk of borrowers.

This conclusion is also supported by the empirical research of Berger et al. (2009). By comparing the different types of banks in 23 developed nations from 1994 to 2003, Berger et al. (2009) found that state-owned banks were much less efficient than foreign banks, especially the Big Four in the state-owned banks. Moreover, information-based theories of banking relationships (Stein, 2002) provide another perspective to explain this phenomenon. Since foreign banks are headquartered in another country, they have less capacity to deal with “soft” (e.g. non-financial) information regarding local companies than “hard” (e.g. financial) information. As a result, foreign banks have a higher demand for high quality “hard” information and are inclined to lend to conservative companies. Therefore, there is a significant disparity between the demand of SBs and non-SBs for the conservatism of borrowers. After the economic downturn in 2007-2008, the SBs stepped up their lending efforts according to the national policies (four trillion investment plan), which has relaxed their demand for conservatism. Therefore, this thesis predicts that after IFRS adoption, the conservatism of companies borrowing from SBs will be further reduced and SBs will still have lower demand for conservatism. Therefore, the following is the fifth hypothesis:

*H5: The implementation of new Chinese standards has a greater negative impact on firms who borrow from state-owned banks in terms of conditionally conservative accounting than firms who borrow from non-state-owned banks.*



### **4.3 Effects of IFRS adoption on unconditional conservatism**

Unconditional conservatism is generally considered as the accounting treatment method an enterprise decides to adopt at the initial stage of the generation of assets or liabilities. The use of such accounting methods lead to unrecorded goodwill, which makes the market value of companies higher than their book value. For example, expenditures (such as research and development [R&D] and advertising) incurred by most of the intangible assets formed internally are expensed at the time of occurrence and are directly credited to the current profits and losses, requiring enterprises to use the accelerated depreciation method on fixed assets or the historical cost method on projects with a positive net present value.

The main impact of new Chinese accounting standards on unconditional conservatism is reflected in the changes concerning the requirements of capitalisation, depreciation, and amortisation.

The former standard required that the recorded value of internally-generated intangible assets should be confirmed according to the registration fee, the lawyers' fees, and the like. The R&D costs incurred before the lawful application should be recognised as current expenses. The new accounting standards divide the expenditure of internal research and development projects into research expenditures and development expenditures, which mainly refer to the IAS 38 Intangible Assets. The research stage indicates the process of gaining new scientific or technical knowledge by carrying out creative and planned investigations. The development stage reflects that research results or other knowledge can be applied to a plan or a design for the production of new or substantially improved materials, devices, and productions. All expenditures occurring during the research phase are recognised as expenses accounted into the current profit or loss. During the development phase, expenditures that have met the conditions of capitalisation can be capitalised and accounted into intangible assets. Conversely, if such conditions are not met, the expenditure needs to be accounted directly into the current profit or loss. This will reduce the level of unconditional conservatism of the listed

companies.

The new standards in “fixed assets” (property, plant, and equipment) (Article 14, ASBE No. 4) states that enterprises shall depreciate for all fixed assets. It is important to note that fixed assets that have been fully depreciated and still continue to be used and the land accounted with separate pricing shall be excluded from the assets to be depreciated. However, the former standards did not allow companies to depreciate idle fixed assets. Therefore, as per those former standards, listed companies, in case of poor operating performance, may reduce the depreciation to adjust the amount of profits through the adjustment of fixed asset categories (listed fixed assets as idle fixed assets). This is done so that financial reports in such cases do not reflect the fair and true state of the business. Moreover, it is obvious that the part of expenses and costs not recognised into the income statement and the value of assets in the balance sheet is much higher than its real value. In fact, such adjustments violate conservatism. Therefore, depreciation for all fixed assets by means of a straight-line method and accelerated depreciation can guarantee the continuity of costs and expenses in the course of business operation, thereby reflecting the value of fixed assets with more accuracy and increasing unconditional conservatism.

Therefore, unconditional conservatism of Chinese-listed enterprises is determined by the impact degree of both such changes. If the impact of change in the requirement of capitalisation is higher than depreciation, unconditional conservatism of Chinese-listed firms will be reduced as happened after the IFRS-convergent GAAP in 2006. Conversely, if the impact of change with regard to depreciation is higher than capitalisation, unconditional conservatism of Chinese-listed firms will depict an increase. Thus, it finally becomes an empirical issue whether a change in the standards will lead to the rise or fall of unconditional conservatism.

#### ***Capitalization of R&D costs in China***

The conditions for the capitalisation of R&D expenditures are relatively strict in accordance

with the new standards in China. Most companies did not follow the requirements of the new standards for capitalising R&D expenses in line with the conditions of capitalisation, instead, they directly expensed all the R&D expenditure. Shao and Sun (2014) studied the capitalisation of R&D expenditures of 108 listed high-tech companies in 2013 and found that most high-tech companies did not distinguish between the capitalisation and expense of R&D expenses in accordance with the requirements introduced by the new standards. They also listed the most listed high-tech companies that tend to expense all or most of their R&D costs. They analysed the objective and subjective reasons responsible for this situation. The objective reasons include the difficulty in project cost collection due to multi-project research and development, the difficulty in distinguishing between the research phase and the development phase, the difficulty in judging capitalisation conditions during the development phase, and the lack of mandatory rules and regulations with respect to R&D expenses. The subjective reasons, on the other hand, include capitalisation increasing tax, high profit margins and low motivation for profit manipulation, low emphasis on intangible assets, and so on. The problems regarding capitalising R&D expenditures are mostly concentrated in high-tech companies. In light of this, Shao and Sun (2014) discovered that most high-tech companies directly expense all their R&D expenditures, suggesting that change in the requirements relating to capitalisation should have a relatively low impact on Chinese-listed firms.

#### ***Depreciation for idle fixed assets in China***

Before 2006, Chinese companies had a large number of idle assets, which had already become a serious problem. In China, idle assets are considered to be those fixed assets that have been deactivated for more than one year and are not needed for the time being, or those that have been replaced by other new assets due to technological upgrades. The formation of idle assets is mainly due to the advancement of science and technology, adjustment in industrial structures, poor performance or management, and a shortage of funds. As per the former standards, companies could not depreciate idle fixed assets. However, this is not allowed under the new standards. Therefore, it can be predicted that this change will obviously increase the depreciation of companies if companies have a serious problem concerning idle

assets. Many literatures by experts such as Yang (2014), Geng (2013), Yang (2012), among others, believe that there is a serious problem of idle assets in Chinese companies. However, no one has specifically studied on the scale and changes of idle assets of Chinese-listed companies. Due to the lack of research result regarding the changes in idle assets, this thesis employs regressions to measure the impact of the standards changes on the depreciation. In order to test the effects of new standards on the depreciation of Chinese-listed companies, this thesis develops a simple model:

$$DEPr_{it} = \beta_0 + \beta_1 IFRS + \beta_2 SOE + \varepsilon_{it}$$

where DEPr is the dependent variable measured as the ratio of depreciation to total fixed assets (property, plant, and equipment) and the suffixes *i* and *t* denote firm and year respectively. IFRS is a dummy variable, which is equal to one if the Chinese-listed firms adopt IFRS-based new standards and equal to 0 if otherwise. SOE is one if the company is eventually controlled by the government and zero otherwise.

Table 8.1: The effect of IFRS convergence on depreciation in China

	(1)
VARIABLES	
DIFRS	0.0112*** (8.55)
SOE	-0.00208* (-1.78)
Constant	0.133*** (109.99)
Observations	9079

Notes: All continuous variables are winsorized at a 1%. *t* statistics are shown in the parentheses. \*, \*\*, \*\*\* represent that statistical results are significant at 10%, 5% and 1%, respectively.

As Table 8.1 demonstrates, the coefficients on IFRS are positive and statistically significant at the 1% level, suggesting that the depreciation ratio of Chinese public enterprises obviously increased in the post-IFRS convergence period. Therefore, it can be observed that the impact scope of changes in capitalisation is far less than that in depreciation and is mostly concentrated in high-tech enterprises. In addition, it is worth mentioning that most high-tech

companies in China directly expense all their R&D expenditures. Due to a higher impact with respect to change in depreciation as compared to capitalisation, this thesis posits the sixth hypothesis as below:

*H6: Unconditional conservatism of Chinese public enterprises increased posterior to implementation of IFRS-based standards.*

Compared to non-SOEs, SOEs face more problems of idle assets and possess a lower depreciation ratio. The coefficients on SOEs, therefore, are significantly negative. This can be further proven by comparing the coefficient of IFRS across the SOEs and non-SOEs.

Table 8.2: Comparison between SOEs and non-SOEs in the periods around IFRS convergence

VARIABLES	(1) SOE	(2) non-SOEs
DIFRS	0.0115*** (6.79)	0.0109*** (5.16)
Constant	0.131*** (106.22)	0.131*** (77.94)
Observations	5036	3780

Notes: All continuous variables are winsorized at a 1% point. *t* statistics are shown in the parentheses.

\*, \*\*, \*\*\* represent that statistical results are significant at 10%, 5% and 1%, respectively.

As is demonstrated in Table 8.2, the coefficients on IFRS in SOEs are higher than in non-SOEs groups, suggesting that increased depreciation ratio of SOEs is more than non-SOEs. Therefore, after following Chinese new standards, the increase in the degree of unconditionally conservative accounting is higher in SOEs compared with companies with non-SOEs. In light of the above-mentioned discussions, the seventh hypothesis is as follows:

*H7: The implementation of new Chinese standards has a greater positive impact on state-owned enterprises in terms of unconditionally conservative accounting than non-state-owned enterprises.*

## **Chapter Five: Research methods for conditional conservatism**

Given the discussions above about the inefficiency of the Chinese security market in the sample period, this thesis adopts the accrual-based measurement of conditional conservatism as the baseline empirical approach. This thesis also examines the main results using Basu's (1997) reverse equation method. The non-tabulated results showed that the empirical findings based on Basu's (1997) method are similar but less significant, probably due to the additional noises in the market-based proxy for true economic outcomes.

### **5.1 Accrual-cash flow method of conditional conservatism**

Ball and Shivakumar (2005) researched the role of accruals, e.g. working capital accruals, in the asymmetric timeliness in recognising losses and gains in financial reports, which can measure conditional conservatism. In empirical research related to conservatism, accruals are not exactly the same as the specific accrued items in accounting practices. Accruals are defined as earnings minus cash flow from operation, which include changes in receivables, inventory, accounts payable and accrued liabilities, taxes payable, depreciation and amortisation, other assets and liabilities, and miscellaneous accruals (Ball and Shivakumar, 2005).

By definition, the asymmetric timeliness in how losses and gains are recognised can measure the conditional conservatism when losses and gains are revised in expectation of future cash flow variations in financial statements. As the revision of gains and losses is in accordance with revisions of cash flows that are expected to occur in the future, i.e. before gains and losses are realised in cash, recognition of losses and gains usually relates to accounting accruals, which have essential functions in determining the asymmetric timeliness in the pattern of how losses and gains are recognised. As a result, the impact of accruals on the asymmetric timeliness in how losses and gains are recognised is related to the measure of

conditional conservatism. In addition, because the economic losses and gains in one accounting period can be regarded as the operating cash flow in the current period after the variation in the PV (present value) of cash flows in future periods have been taken into account, an econometric model of (conditional) conservatism can be formulated according to how accruals are related to cash flows.

### ***Theoretical foundation***

The theoretical foundation of the accruals-cash flow model is based on the positive correlation between accruals and operating cash flow in the current period. This positive correlation is caused by the asymmetric timeliness in the recognition of losses and gains; the negative serial correlation between accounting accruals and current-period operating cash flows is caused by the noise mitigation effect of accounting accruals, i.e. the phenomenon whereby accounting earnings are less noisy than operating cash flow in financial statements in that it mitigates the transitory noise in cash flows by expensing costs when it is used to generate revenue instead of waiting until it is actually paid for. The relationship between accounting accruals and operating cash flows is thus determined by these two offsetting correlations. Conservatism can be measured by isolating its impacts on the association between accruals and operating cash flows, since it only affects the positive correlation between accruals and operating cash flow. Because conservatism causes the asymmetric timeliness of recognising economic losses and gains in accruals, the positive correlation between accounting accruals and operating cash flow of this period is greater in periods when economic losses are recognised than in periods when economic gains are recognised. On the other hand, no such asymmetry exists for the negative correlation between accounting accruals and operating cash flow of current period, which is caused by the noise reduction effect, i.e. the phenomenon whereby accruals, in particular working capital accruals, help to mitigate the fluctuations in operating cash flows due to changes in a firm's working capital levels. Therefore, conservatism can be measured by the positive correlation between accruals and operating cash flow.

The asymmetric timeliness in how losses and gains are recognised inevitably involves accounting accruals because revisions of expected cash flows are made, at least in part, before they are actually realised. Ball and Shivakumar (2005) have demonstrated a positive relationship between operating cash flow and accounting accruals, because cash flow is positively correlated with the present value of cash flows expected in all future periods in the current period. For example, a factory that generates decreased cash flow in the current period because of a decrease in competitiveness is likely to have reduced expected future cash flows as well. Meanwhile, an income-decreasing accrual is required for the impaired future cash flows so that they can be recognised in time, resulting in the positive correlation between operating cash flow in the current period and accounting accruals.

The theoretical development of the positive correlation between accruals and operating cash flow can be illustrated with the example of a long-term asset. At the beginning of the current period, a long term asset is expected to generate a certain amount of future cash flows. When the current period ends, however, the arrival of new information causes the future cash flow expected to be generated from the fixed asset to be revised. The change in the cash flow of the current period is thus the cash effect of the change in the current year's fixed asset's value . As long as the value of the fixed asset is 'booked' on the balance sheet, i.e. it is not a growth option, and the change in the asset's present value causes an accrued loss or gain, the change in the cash flow for the current period will be correlated with the accrued part of the accounting income in the current period, causing cash flows of the current period and accounting accruals to have a positive correlation.

Another important relationship between accounting accruals and the recognising of economic losses and gains is the negative serial correlation between operating cash flows for the current period and accounting accruals, which is caused by the noise mitigation effect, i.e. the phenomenon whereby accounting earnings have fewer fluctuations than operating cash flows



in financial statements in that it mitigates the transitory noise in cash flows by expensing costs when it is used to generate revenue instead of waiting until it is actually paid for. In particular, working capital accruals helps to reduce such noises. Holding long-term accruals of losses and gains equal, the noise-mitigating effect of working capital accruals implies that accruals and operating cash flows are negatively correlated. It is important to note that, compared with the asymmetric positive correlation between accounting accruals and operating cash flows for losses and gains, the negative correlation between accruals and operating cash flows is symmetric for losses and gains. Therefore, on one hand, there is a positive correlation between operating cash flows in the current period and accounting accruals as a result of the asymmetric timeliness in how losses and gains are recognised. On the other hand, there is a negative correlation between accounting accruals and operating cash flow for the current period due to the earnings mitigation effect of the transitory accrued loss component of earnings, i.e. earnings caused by transitory accrued losses.

To discriminate between these two opposite correlations between operating cash flows and accounting accruals of current period, Ball and Shivakumar (2005) introduced a test made possible by the fact that the positive correlation between accounting accruals and operating cash flows for the current period is asymmetric due to the effects of conditional conservatism. Because of conservative accounting principles, the positive correlation between accounting accruals and operating cash flows for the current period is greater in periods when economic losses are recognised than in periods when economic gains are recognised. On the other hand, no such asymmetry exists for the negative correlation between operating cash flows for the current period and accounting accruals, which is caused by the noise reduction effect. Therefore, Ball and Shivakumar (2005) hypothesised that the relationship between accounting accruals and cash flows for the current period is non-linear due to the asymmetric timeliness in the manner of which losses and gains are recognised, which is introduced by conservatism.

Several other studies also support Ball and Shivakumar's (2005) hypothesis of a non-linear relationship between accounting accruals and operating cash flows in the current accounting

period. For example, in Basu's study (1997), earnings variables, which are indicators of accruals, produce different incremental slopes from cash flows when both are regressed on negative stock returns. Similarly, Ball et al. (2000) found that accruals can be determined by stock returns (which are indicators of economic losses and gains) through a piecewise linear function.

To measure the asymmetry in the correlations between operating cash flows and accounting accruals for the current period, Ball and Shivakumar (2005) proposed the following piecewise linear model:

$$ACC_{it} = \beta_0 + \beta_1 DCF O_{it} + \beta_2 CFO_{it} + \beta_3 DCF O_{it} CFO_{it} + \varepsilon_{it}, \quad (1)$$

where *ACC* stands for the accruals of company *i* in year *t*, and is defined as (earnings before extraordinary items–operating cash flow) /average total assets. *CFO* stands for the cash flow from operation, which can be defined as [earnings before extraordinary items – Δ(working capital+ depreciation)] /average total assets. Δ(working capital) is measured as Δ(current assets) minus Δ(cash) minus Δ(current liability) and plus Δ(current portion of long-term loan). *DCFO* is a dummy variable, which is equal to 1 if the operating cash flow < 0 and equal to 0 if otherwise. The coefficient  $\beta_3$  estimates the conditional conservatism degree of regressed firm-year group.

The study of Ball and Shivakumar (2005) showed that the piecewise linear regression of accruals on economic losses and gains/cash flows produces significantly better correlation than the linear regression of accruals on economic losses and gains/cash flows in previous studies. Therefore, this finding confirms the non-linear relationship between operating cash flows for the current accounting period and accounting accruals, and the impacts of conditional conservatism (which are shown in the asymmetric timeliness in the manner of which losses and gains are recognised) on the relationship between operating cash flows for the current period and accounting accruals. It should be noted, however, that the extent to which the explanatory power of the model is improved with the degree to which it

incorporates the loss recognition function of accruals. This finding can be taken as evidence for the hypothesis that the function of how accruals recognise losses is the cause of the non-linear relationship between operating cash flows for the current period and accounting accruals. Furthermore, the extent to which the explanatory power of non-linear regression of accruals on cash flows has been improved over the explanatory power of conventional linear regression of accruals on cash flows is positively related to the degree to which accruals reflect the asymmetric timeliness in the recognition of earnings and losses, i.e. conservatism.

Finally, in relation to the time series property of conservatism, Ball and Shivakumar's results (2005) showed consistently robust asymmetry in the relationship between accruals and economic gains, and the relationship between accruals and economic losses, with the coefficient on negative cash flow (which is an indicator of economic loss) being consistently positive and steadily increasing. This result is in line with Basu's findings (1997), as well as Givoly and Hayn's (2000) who documented the trend of conservatism. In other words, Ball and Shivakumar's results (2005) showed that the accrual process captures economic losses with more timeliness than economic gains. Therefore, the difference between the timeliness with which the accrual process captures economic losses and gains can be used as a measure of conservatism, hence the accrual–cash flow measurement method of conservatism. In order to apply this accrual–cash-flow-based measure of conservatism, a specific model capturing the correlation between accounting accruals and operating cash flow, as well as an indicator for economic losses and gains, needs to be identified, and regressed using non-linear specification, e.g. Ball and Shivakumar's (2005) piecewise linear model. The difference in the coefficients of negative and positive operating cash flow in Ball and Shivakumar's (2005) piecewise linear model thus measures the degree of conditional conservatism.

### ***Assumptions***

An important assumption in the accounting accruals–cash flow measurement method, according to Ball and Shivakumar's method (2005), is that the information causing revisions

to expected future cash flows must be related with current-period cash flows and ‘bookable’ losses and gains, i.e. losses and gains that can be confirmed, rather than ‘unbooked’ items such as synergies and growth options. It is important to note that the positive correlation between operating cash flows of the current period and accruals is based on the assumption that some information about future cash flows affects both cash flows in the current period and the ‘bookable’ losses and gains caused by revisions in expected future cash flows, according to Ball and Shivakumar (2005).

### *Advantages*

A major advantage of the accounting accruals–cash flow measurement method, which is based on the difference in the explanatory power of the non-linear and linear regression of accruals on cash flows, is that it discriminates the noise reduction role of accruals from its function in the timely recognition of losses. While studies such as Ball et al. (2000) and Dechow (1994) have analysed the correlation between accruals and cash flows, they fail to discriminate between these two different roles of accruals in the determination of cash flows and assume a negative symmetric correlation between accruals and cash flows. The accruals–cash flow model improves this by introducing non-linearity to the correlation between accruals and cash flows by discriminating between the noise reduction and timely loss recognition role of accounting accruals, offering a more accurate specification of the correlation between accruals and cash flows.

Another important advantage of the accruals–cash flow model is that it can measure conservatism without relying on the market-based indicator for economic losses and gains, and uses purely book-based indicators for economic losses and gains to measure conservatism. To date, most of the measurement methods for conservatism are developed, at least in part, based on Basu’s method (1997), which relies on market-based proxies for economic losses and gains. Since the financial market may not be efficient, using market-based proxies for economic losses and gains makes the measurement of economic losses and gains susceptible

to errors caused by market inefficiency. By using book-based proxies for economic losses and gains, e.g. the cash flow indicator, change in cash flow indicator, and the industry-adjusted cash flow indicator used by Ball and Shivakumar (2005), the accounting accruals–cash flow method for measuring conservatism can effectively avoid the misleading effects of market inefficiencies and directly measure the impacts of conservatism on the relation between accruals and the book-based proxies of economic losses and gains.

### ***Disadvantages***

A potential disadvantage of the accounting accruals–cash flow measurement method based on Ball and Shivakumar’s model (2005) is that it may be less effective than a market-based indicator for economic gains and losses. In their robust tests of the results, Ball and Shivakumar (2005) found that the improvements in the explanatory power of the piecewise linear regression model on the relationship between accruals and cash flows over the linear regression model is less significant for model specifications using market-based indicators for economic losses and gains than for model specifications using book-value-based proxies for economic losses and gains. Since the improvement in the explanatory power of the piecewise linear regression model on the correlation between accruals and cash flow over the linear regression model relies on the identification of ‘bookable’ accrued losses and gains, this implies that market-based indicators of economic losses and gains are inferior to proxies based on financial statement information for the purpose of effectively identifying ‘bookable’ accrued losses and gains. However, market returns are more significantly influenced by the ‘unbooked’ element of the balance sheet, such as synergies and growth options, whereas financial statement information, such as cash flows and changes in cash flows plays a less important role in determining market return. Moreover, Basu (1997) points out that both good and bad news often has very little effect on cash flows in the current period. Therefore, the accounting accruals–cash flow measurement using a book-value-based indicator for economic gains and losses may be less effective than the market-based proxies for economic losses and gains, if the market is effective.

Another disadvantage of the accounting accruals–cash flow measurement method based on Ball and Shivakumar’s model (2005) is the lack of distinction between long-term and short-term accruals. According to Guay (2005), when the individual components of accruals in Ball and Shivakumar’s (2005) model are used as dependent variables, the coefficients on the independent variables in Ball and Shivakumar’s (2005) model show very different results. More specifically, the coefficients on the independent variables in Ball and Shivakumar’s (2005) model are quite similar when the dependent variables are short-term individual components of accruals, such as working capital items including inventory and accounts receivables. On the other hand, the coefficients of the independent variables in Ball and Shivakumar’s (2005) model show very different results when dependent variables are long-term individual components of accruals, e.g. impairment of goodwill, restructuring charges, etc. Guay (2005) suggests that long-term accruals such as impairment of goodwill, restructuring charges, and write-down of asset values are more likely to be associated with the impacts of conservatism and asymmetry in the timelines of losses and gains recognition. Therefore, while the accounting accruals–cash flow measurement method based on Ball and Shivakumar’s model (2005) improves upon previous models by introducing non-linearity to the relationship between accruals and cash flows, it can be further improved by focusing on the relationship between long-term accruals and cash flows to give a more accurate measurement of conservatism.

## **5.2 Basu’s measurement**

The earnings share return measurement method relies on the asymmetric timeliness of the incorporation of good news and bad news in earnings to measure the level of conditional conservatism. This measurement method was first explored in detail by Basu (1997), who hypothesised and confirmed that the reflection of publicly available bad news in reported earnings is more concurrently sensitive and timely than the reflection of publicly available good news.

### ***Theoretical foundation***

Using share returns to measure the effects of “bad” or “good” news on the timeliness and persistence of earnings, Basu (1997) found that earnings are two to six times more sensitive to negative returns than to positive returns. Furthermore, the effects of negative returns on earnings are less persistent, when compared with positive earnings. In Basu’s (1997) research, conservatism can be defined as the tendency for earnings of bad news relating to a company’s future cash flow to be recognised in a more timely fashion than good news. As a result, Basu (1997) infers that bad news is reflected in reported earnings in a more timely manner than good news and that there is a systematic difference between the impacts of bad news and good news on the persistence and timeliness of reported earnings.

In devising the theoretical premises of his predictions, Basu (1997) points out that both good and bad news often have very little effect on cash flows in the current period, whereas the impact of bad news is often immediately incorporated in current earnings. Therefore, Basu (1997) theorised that the impacts of both good and bad news on current returns have weak associations with current cash flows, whereas ‘bad news’ is more likely to affect accruals and be incorporated into the earnings for the current period, leading to his prediction about the asymmetric relationship between concurrent association between earnings and return. Under conservative accounting principles, the impact of bad news is typically reported as losses, which means that the impact of bad news on earnings is timely but not persistent. By contrast, the reflection of good news on earnings is less timely, yet more persistent, when compared with the impact of bad news. The rationale behind these two inferences, according to Basu (1997), is that accountants require more information to verify and confirm the recognition of good news, causing the asymmetric timeliness of the reflection of good news and bad news on earnings. On the other hand, because the current earnings only partially reflect the capitalised value of good news, the impact of good news on earnings is more persistent than bad news. Furthermore, because the market’s response to more persistent news is greater, the abnormal return of unexpected earnings is also greater for good news, which is more persistent than bad news.

In Basu's (1997) empirical tests of the systematically different impacts of good earnings news and bad earnings news on the persistence and timeliness of reported earnings, he used unexpected annual share returns as proxies for the impact of the news, associating positive unexpected annual share returns with good news and negative unexpected annual share returns with bad news.

In order to test that the reflection of publicly available bad news in reported earnings is more concurrently sensitive and timely than the reflection of publicly available good news, Basu (1997) employed the 'reverse' regression model by Beaver et al. (1980), in which annual earnings are regressed on current annual returns with earnings as the dependent variable. The method is specified as the following:

$$X_{it}/P_{it-1} = \alpha_0 + \alpha_1 DR_{it} + \beta_0 R_{it} + \beta_1 R_{it} * DR_{it} \quad (2)$$

where  $X_{it}$  stands for the earnings per share for company  $i$  in year  $t$ ,  $P_{it-1}$  stands for the market price per share at the start of year  $t$ ,  $R_{it}$  stands for the return of company  $i$  from nine months before the end of year  $t$  to three months after.  $DR_{it}$  is the dummy variable, which is equal to one if  $R_{it}$  is negative and is equal to zero if otherwise.

Basu's empirical test (1997) demonstrated that the coefficient of negative market-adjusted returns is 6.45 times higher than that of positive market-adjusted returns. Moreover, he also found that the explanatory power of negative market-adjusted returns, measured by the adjusted R square, is higher than that of the positive market-adjusted return by 10%. With these statistics, Basu (1997) concluded that this empirical test supports his prediction, as both the difference of adjusted R square and the disparity of slope coefficient between good earnings news and bad earnings news confirms that bad news is reflected in earnings on a timelier basis than good news. The differences in the timeliness of reflecting bad news and good news in earnings, measured by the slope coefficient or adjusted R square in model (2) listed above, can, therefore, be considered as a measure of conditional conservatism. In other words, the difference in the slope coefficient of negative abnormal returns and positive



abnormal returns can be a measure of conditional conservatism. A more significant distinction in the slope magnitude of negative abnormal returns and positive abnormal returns indicates a higher degree of conservatism, and vice versa.

### *Advantages*

Basu's (1997) earnings–share–return-based measurement method of conservatism has several strengths. First, in terms of model design, the model is used to find the difference in the slope coefficient of negative abnormal returns and positive abnormal returns. The earnings–share–return-based measure of conservatism has a better specification of the test statistics and standard errors typically found in ordinary least square (OLS) models. Therefore, compared with other measures of conservatism that are found using OLS models, Basu's (1997) earnings–share return method is more accurate.

Secondly, the validity of the earnings–share–return-based measurement method of conservatism has been tested thoroughly in various different situations, which enhances the confidence in its reliability as a measurement method of conservatism. Easton et al. (1992) argue that the timeliness of earnings can be improved by lengthening the time frame of data analysis. This argument is also supported by the empirical evidence found by Lev (1989), Dechow (1994), and Kothari and Sloan (1992). What can be inferred from this argument is that the difference in the slope coefficient square of negative abnormal returns and positive abnormal returns will be larger if the data analysis time frame is lengthened. Additional tests of this inference in Basu's model (1997) confirmed this, enhancing the reliability of the distinction in the slope coefficient of negative abnormal returns and positive abnormal returns as a measure of conservatism. Similarly, the additional test on how variation in the legal liability exposure of auditors affects the distinction in the slope coefficient of negative abnormal returns and positive abnormal returns also confirmed its validity, lending support to the method's reliability as a measure of conservatism.

## *Disadvantages*

Basu's (1997) earnings–share return measurement method, based on the difference in the slope coefficient/adjusted R square of negative abnormal returns and positive abnormal returns, also suffers from several weaknesses.

First of all, Dietrich et al. (2003) criticised Basu's (1997) earnings–share return measurement method from an econometric perspective, arguing that Basu's (1997) use of share return as an independent variable renders his results ineffective because share return is an endogenous variable.

Furthermore, Dietrich et al. (2007) argued Basu's (1997) measure of conservatism, which is based on asymmetric timeliness of earnings response to good news and bad news, produces results that are mostly attributable to biases in test statistics instead of conservatism. Using a simulated dataset constructed to lack the property of asymmetric timeliness of earnings, Dietrich et al. (2007) found that biases in coefficients estimated in Basu's (1997) model may produce empirical results that can be interpreted as evidence of conservatism, even when the asymmetric timeliness of reported earnings is in fact absent. Patatoukas and Thomas (2011) also found evidence suggesting that results produced by the Basu measure of conservatism might contain biases due to the existence of a scale effect. More specifically, Patatoukas and Thomas (2011) suggested that there is a negative correlation between share price and share–return variance, as well as between share price and deflated accounting earnings. Such negative correlations, according to Patatoukas and Thomas (2011), generate positive coefficients of differential timeliness in Basu's (1997) model, thus producing false indications of conservatism.

The problem in Basu's (1997) earnings–share return method has also been pointed out by Ball and Shivakumar (2005). According to Ball and Shivakumar (2005), Basu's (1997) earnings–

share return method of conservatism cannot separate temporary changes of earnings and losses from accruals. Instead, temporary changes of earnings and losses are treated effectively as random errors in Basu's (1997) method. Furthermore, temporary changes of earnings and losses in Basu's (1997) earnings–share return method of measuring conservatism also cannot be separated from the effects of earnings management. Therefore, the accuracy of Basu's (1997) method of measuring conservatism is vulnerable to the effects of temporary changes of earnings and losses and possibly earnings management as well.

Another potential problem with Basu's (1997) earnings–share return method of measuring conservatism is that it has been found to be negatively correlated with other measures of accounting conservatism. Givoly, Hayn, and Natarajan (2003), for example, found that Basu's (1997)'s earnings–share return measure of conservatism has negative correlations with other important empirical measures of conservatism, such as the ratio of market value to book value of equity. This means that Basu's (1997) earnings–share return method of measuring conservatism produces contradictory results with the MTB method. Richardson and Tinaikar (2004) explained that the discrepancy between Basu's (1997) method and the MTB method results from their different approaches to measuring conservatism. The MTB method measures the ex-ante or unconditional conservatism, whereas Basu's (1997) earnings–share return measure of conservatism measures ex post or conditional conservatism through earnings asymmetric responses to bad news and good news. Therefore, one potential weakness of Basu's (1997) earnings–share return measure of conservatism is its inadequacy for measuring unconditional conservatism.

### **5.3 Accrual model specification for measuring impacts of IFRS-adoption**

Following former research such as Chen et al. (2010) and Ball and Shivakumar (2005), this thesis used an interaction term between the treatment of IFRS-based standards and the conditional conservatism to investigate the effect of new Chinese standards on the extent of

firms' conservatism. This effect will be measured by the following econometric model:

$$ACC_{it} = \beta_0 + \beta_1 DCF_{it} + \beta_2 CFO_{it} + \beta_3 DCF_{it} CFO_{it} + \beta_4 IFRS + \beta_5 IFRS * CFO_{it} + \beta_6 IFRS * DCF_{it} CFO_{it} + \varepsilon_{it}, \quad (3)$$

where  $ACC$  stands for the accruals of company  $i$  in year  $t$ , and is defined as (earnings before extraordinary items–operating cash flow) /average total assets.  $CFO$  stands for the cash flow from operation, which is defined as [earnings before extraordinary items –  $\Delta$ (working capital+ depreciation)] /average total assets.  $\Delta$ (working capital) is measured as  $\Delta$ (current assets) minus  $\Delta$ (cash) minus  $\Delta$ (current liability) and plus  $\Delta$ (current portion of long-term loan).  $DCF$  is a dummy variable, which is equal to 1 if the operating cash flow  $< 0$  and equal to 0 if otherwise.  $IFRS$  is a dummy variable, which is equal to one if Chinese-listed firms adopt IFRS-based new standards and equal to 0 if otherwise. The variable in equation (3) that needs attention here is the three-way interaction term between  $CFO$ ,  $DCF$ , and  $IFRS$ , which is measured by  $\beta_6$  representing the influences of IFRS-based standards in China on conditionally-conservative accounting.

## 5.4 Basu model specification for measuring impacts of IFRS-adoption

Similar to equation (3), this thesis also introduced an interaction term between the treatment of IFRS-based standards and the conditional conservatism into Basu's model for examining the impacts of new Chinese GAAP on the extent of firms' conservatism. This effect will be measured by the following econometric model:

$$E_{it}/P_{it} = \beta_0 + \beta_1 DRET_{it} + \beta_2 RET_{it} + \beta_3 DRET_{it} RET_{it} + \beta_4 IFRS + \beta_5 IFRS * RET_{it} + \beta_6 IFRS * DRET_{it} RET_{it} + \varepsilon_{it}, \quad (4)$$

where  $E_{it}$  stands for the earnings per share for company  $i$  in fiscal year  $t$ ,  $P_{it-1}$  stands for the market price per share at the start of fiscal year  $t$ , and  $RET_{it}$  is the return of company  $i$  from nine months before the end of fiscal year  $t$  to three months after.  $DRET_{it}$  is the dummy variable, which is equal to one if  $R_{it}$  is negative and is equal to zero if otherwise. The variable in equation (4) that needs attention here is the three-way interaction term between

*RET*, *DRET*, and *IFRS*, which is measured by  $\beta_6$  representing the influences of IFRS-based standards in China on conditionally-conservative accounting.

## 5.5 Model specification with control variables

Khan and Watts (2009) argued that company size (*SIZE*), market value to book value ratio (*MB*) and financial leverage (*LEV*) are the main factors affecting conditional conservatism. Thus, these three control variables are used in the model. Meanwhile, according to the research conducted by Khan and Watts (2009), *SIZE* is defined as the natural logarithm of the total assets in the beginning of a corresponding year for each company, *LEV* is the ratio of total liability to total assets and *MB* is the market value-to-book value ratio of the equity.

The accrual-based model with control variables can be established as following:

$$\begin{aligned} ACC_{it} = & \beta_0 + \beta_1 DCF O_{it} + \beta_2 CFO_{it} + \beta_3 DCF O_{it} * CFO_{it} + \beta_4 IFRS + \beta_5 IFRS * CFO_{it} \\ & + \beta_6 IFRS * DCF O_{it} * CFO_{it} + \beta_7 SIZE + \beta_8 SIZE * DCF O_{it} + \beta_9 SIZE \\ & * CFO + \beta_{10} SIZE * DCF O * CFO + \beta_{11} MB + \beta_{12} MB * DCF O + \beta_{13} MB \\ & * CFO + \beta_{14} MB * DCF O * CFO + \beta_{15} LEV + \beta_{16} LEV * DCF O + \beta_{17} LEV \\ & * CFO + \beta_{18} LEV * DCF O * CFO + \varepsilon_{it} \end{aligned}$$

Basu's model with control variables can be established as following:

$$\begin{aligned} E_{it}/P_{it} = & \beta_0 + \beta_1 DRET_{it} + \beta_2 RET_{it} + \beta_3 DRET_{it} RET_{it} + \beta_4 IFRS + \beta_5 IFRS * RET_{it} + \beta_6 IFRS \\ & * DRET_{it} RET_{it} + \beta_7 SIZE + \beta_8 SIZE * DRET + \beta_9 SIZE * RET + \beta_{10} SIZE \\ & * DRET * RET + \beta_{11} MB + \beta_{12} MB * DRET + \beta_{13} MB * RET + \beta_{14} MB \\ & * DRET * RET + \beta_{15} LEV + \beta_{16} LEV * DRET + \beta_{17} LEV * RET + \beta_{18} LEV \\ & * DRET * RET + \varepsilon_{it} \end{aligned}$$

Additionally, the changes in the economic environment during the sample period might have also affected the conservatism choices. The economy before 2007 was generally considered to be prosperous and growing rapidly. The subprime mortgage crisis brought the world economy into recession, and China's economic growth slowed down due to its export-oriented and investment-oriented economic system. This makes it possible for a company to change its conservatism to improve its profitability or business performance. Therefore, in order to distinguish between the impact of the standards change and the macroeconomic change, this thesis also introduces the year ( $\sum_{j=0}^n YEAR$ ) and industry variables ( $\sum_{j=0}^n IND$ ) as control variables.

## 5.6 Book value-to-market value (BTM) method

After Feltham and Ohlson (1995; 1996) began to adopt the term ‘conservative accounting’ to refer to the accounting phenomenon in which the market value of a company’s equity exceeds its book value in the long term, the widely-used book value-to-market value (BTM) and its variants have become an important way to evaluate the degree of conservatism, as has been suggested by Beaver and Ryan (2000), Givoly and Hayn (2000), etc.

The core idea of the BTM measurement method is that, if the companies follow the principle of accounting conservatism, it will be easier for them to overestimate liabilities and underestimate assets. That will lead to the underestimation of the book value of net assets. The BTM measurement method relies on the premise of an efficient market, meaning that the market value of the net assets of a company is not affected by the different accounting method (aggressive or conservative) that is adopted by the accounting personnel. This differs from the valuation model, which measures the market value of a firm’s assets by the present value of its expected net cash flows in the future, making the market value of a firm dependent on the accounting policy adopted as it can affect the present value of future cash flows.

In the BTM measurement method, if the net book value of assets is undervalued when compared to the market value, the accounting policy is considered to be more conservative. In other words, if the ratio of book value to market value of net assets is smaller than one, then the accounting policy is conservative. Conversely, if this ratio is larger than one, the accounting is more unbiased than conservative. In much research, the ratio of book value to market value is employed to measure the degree of conservatism, such as in Wakil’s study (2012; 2014). The ratio of book to market value can also be used interchangeably with the market to book ratio. If the market to book ratio is larger than one, accounting is conservative. Conversely, if this ratio is smaller than one, the accounting is aggressive.

Beaver and Ryan (2000) used the ratio of book to market value as an index to estimate the level of conservatism and found evidence of the existence of accounting conservatism. They

believed that the book to market ratio has two characteristics: bias and lags. The bias here refers to the phenomenon in which the book value of a company's assets is consistently lower than their market value. There are many reasons that cause this bias to occur, such as conservatism and historical cost in accounting, and the impact of inflation and expected positive present value projects in the economic environment. The lags refer to the phenomenon that the unexpected economic gain or loss is not confirmed immediately in the book value of assets but recognised over time. As a result of such lags, the ratio of book to market value is temporarily higher or lower than its actual value. However, over a longer time frame, this ratio will slowly converge with its actual value. Because the bias under the BTM measurement method relates to accounting practices that persistently generate unrecorded goodwill and is ex-ante and news-independent in nature, it is a form of unconditional conservatism. Therefore, knowledge-intensive industries usually have lower BTM ratios and more bias, due to unrecorded intangibles. Similarly, because the lag under the BTM measurement method relates to the differential accounting treatment of unexpected economic gains or losses and is ex-post and news dependent in nature, it is a form of conditional conservatism.

Using the regression of the BTM ratio on current and lagged returns, Beaver and Ryan (2000) measured the bias and lag components of the BTM ratio by the fixed firm effect and fixed time effect. The bias component of a firm's BTM ratio is captured by the firm effect, i.e. the mean of the unexplainable part by the time effect. The lag component of a firm's BTM ratio is captured by the portion of an enterprise's BTM that is explained by the current and lagged returns of the firm's securities. Alternatively, the lag component of the BTM is a proxy for currently unrecognised economic gains and losses. According to Beaver and Ryan (2000), the bias component of the BTM is associated with measures of unconditional conservatism, whereas the lag component of the BTM, which is a result of historical cost accounting, is not associated with measures of unconditional conservatism.

Therefore, the fixed firm effect reflects the fixed bias: fixed time effect reflects the changes in

the economic level; and lagged returns reflect market impact unrecognised in the book value. The specific model is as follows:

$$BTM_{t,i} = \alpha_t + \alpha_i + \sum_{j=0}^6 \beta_j R_{t-j,i} + \varepsilon_{t,i} \quad (5)$$

In this equation, the variations in BTM are decomposed into the bias component, which is measured by the firm effect, and the lag component, which is measured by the portion of BTM associated with current and lagged returns. The biased component of the BTM ratio is captured by  $\alpha_i$ , which is the firm intercepts and captures the average bias of the firm  $i$ . It is mainly used to measure the firm effect, i.e. the persistent component of the BTM ratio of the specific company. The persistent component of the BTM ratio means that some factors continuously affect a certain company. For example, certain enterprises adopt conservative accounting policies, resulting in the book value of their assets being consistently below their market value. The lag component of the BTM is captured by  $\sum_{j=0}^6 \beta_j R_{t-j,i}$ , which is the projection of the BTM that ignores fixed effects. The lag component of the BTM, represented by  $\sum_{j=0}^6 \beta_j R_{t-j,i}$  in the model, reflects the changes in BTM caused by unrecognised past market returns.  $\alpha_t$  is the time intercepts and captures annual variation in the BTM of all companies in year  $t$ . It is mainly used to measure the annual influencing factors across firms. Beaver and Ryan (2000) emphasized that ‘The time intercepts affect this decomposition by substantially changing the  $\beta_j$  coefficients ... the time effects are strongly associated with past average returns for the sample...’. Therefore,  $\alpha_i$  can be used to measure and represent the unconditional conservatism and is inversely proportional to unconditional conservatism.  $R_{t-j,i}$  is the rate of return of firm  $i$  in year  $t$ , and dividend and stock split factors should be considered.

### ***Assumptions***

The derivation of the BTM model assumes that future net cash flows are known with certainty, as well as a perpetually steady growth rate of  $g$  in all future periods. By implication, this means that the BTM model also assumes a perpetually steady BTM ratio over all future periods. The book value of the firm is also assumed to be positive. Furthermore, while the



firm growth rate  $g$  has to be less than  $R$  in order to have projects with positive net present value, in cases where investments have zero net present value it is possible for  $g$  to be larger than  $R$ , although net dividends will be negative in such situations (Beaver and Ryan, 1997). The assumption that the growth rate  $g$  may exceed  $R$  makes the BTM model more accurate in practice, as many firms do grow with a higher rate than  $R$ .

### *Advantages*

Because accounting returns lag behind market returns (Beaver et al., 1980), the BTM method can control deviation from the accounting lags through the regression of the BTM ratio on lagged returns. By utilizing the fixed effects of panel data, the persistent bias component in the BTM ratio can be separated from the transitory lag component in the BTM ratio. The BTM ratio as a proxy variable can be used to measure the degree of accounting conservatism. However, because continued conditional conservatism can make assets undervalued, the BTM as a proxy variable also includes the extent of the conditional conservatism. The advantage of Beaver and Ryan's methods (2000) is that unconditional conservatism (the persistent component) can be separated from the BTM ratio. These methods are, therefore, more accurate measures of the portion associated with unconditional conservatism in the BTM ratio.

The BTM model also provides reliable and strong predictions of future return on equity (ROE) and the terminal values in the discounted residual income valuation model. Beaver and Ryan's (2000) empirical test of the BTM model suggested that, when the BTM is decomposed, both the bias and lag components of the BTM are individually and collectively powerful predictors of firms' return on equity. More specifically, the bias component is more persistently and negatively associated with future ROE than the lag component. Furthermore, Beaver and Ryan (2000) also found that the association between the bias component of the BTM and future ROE attenuates when growth is higher, but the association between the lag component of the BTM and future ROE is not affected by growth. With regard to the BTM model's

ability to predict the terminal values in the discounted residual income valuation model, Beaver and Ryan (2000) found that both the bias and component help predict the terminal values in the discounted residual income valuation model. However, terminal values in the discounted residual income valuation model are significantly more sensitive to the bias component than the lag component. When the BTM is decomposed into the bias and lag components, there is a slight (4%) increase in the BTM's forecasting ability, which is measured by R square.

### ***Disadvantages***

While the BTM model demonstrates significant impacts on the valuations of firm values that are subject to biases or lags in their accounting return, the increase in the explanatory power of the BTM model after it is decomposed into the bias and lag components is very small, which means that the decomposed BTM model does not offer much additional power in predicting firm value with respect to future ROE or terminal values. Beaver and Ryan's (2000) empirical test suggested that, when the BTM is decomposed into the bias and lag components, there is only a slight (4%) increase in the BTM's forecasting ability, which is measured by R square of the estimation function. While the limited increase in the BTM model's explanatory power after it is decomposed may be due to the possibility that many firms are influenced by largely similar degrees of bias and lags in their accounting return and book value, it may also be an indication of the limitations and problems in the design of the BTM model, and particularly in the technical distinction between bias and lag components in the regression model. As pointed out by Beaver and Ryan (2000), it is empirically difficult to accurately separate the bias and lag components of the BTM. Therefore, the BTM model has limited predictability of firm value in cases when it is difficult to separate the influences of bias and lags on the differences between book and market value.

## **5.7 Book-to-market model specification for measuring impacts of IFRS-adoption**

Following previous studies, such as the one by Beaver and Ryan (2000), this thesis exploits

the coefficient term of IFRS convergence to examine the incremental effects of the new IFRS-based standards in China on the extent of unconditional conservatism of Chinese-listed companies. Therefore, equation (5) additionally includes the IFRS dummy variable to measure the impact of IFRS convergence on the unconditional conservatism of listed companies. The econometric model is in accordance with the following equation:

$$BTM_{t,i} = \alpha_t + \alpha_i + \beta_1 IFRS + \sum_{j=0}^6 \beta_j R_{t-j,i} + \varepsilon_{t,i} \quad (6)$$

where IFRS is a dummy variable, which is equal to one if Chinese-listed firms adopt IFRS-based new standards and equal to 0 if otherwise. The variable of our interest in equation (6) is the IFRS dummy, which is measured by the coefficient  $\beta_1$ , demonstrating the impact of new Chinese standards on unconditional conservatism. In equation (6), if  $\beta_1$  is negative, it indicates that the implementation of new Chinese standards in 2006 improved the unconditional conservatism of the listed companies in China. On the other hand, if  $\beta_1$  is positive, the implementation of new Chinese standards in 2006 decreased the unconditional conservatism of the listed companies in China.

# Chapter Six: Data and sample

## 6.1 Data and sample for conditional conservatism

All related data employed in this thesis is collected from the CSMAR (China Securities Markets and Accounting Research) Database. For the ultimate ownership information, this thesis additionally verifies the data validity with the WIND database, which is also widely used by both academic scholars and analysts in China.

The initial sample includes all companies listed – and included in the CSMAR - on the Shanghai and Shenzhen Stock Exchanges from 2001 to 2010. The admission of China to the WTO initiated the establishment of a series of new standards that came into force in 2001. China had just completed its previous accounting standards reforms and implemented standardized accounting practices in all industries by the year 2001. Therefore, the first year of the sample should be 2002, taking into account that several variables require a one-year lag value. Focusing on only one accounting standards reform period helps to eliminate confounding impacts of irrelevant GAAP change and improve the testing capabilities.

Owing to insufficient data to calculate accruals, 795 observations were eliminated. Furthermore, 312 observations in the financial industry were removed. Of the remaining 13,503 observations, additional 1,594 observations were removed since the ultimate controlling shareholders of the firms are unable to determine. The size of the final sample is 11,909 observations. The sample for analyses, based on Basu's method, consists of 10,591 firm-years, which is smaller than the main sample due to a lack of observations of valid share return information. Because the baseline research method of this thesis is a long-window study, this thesis also compiled a pseudo-balanced sample by excluding firms which went public after the year 2006. The pseudo-balanced sample is used in the tests of this research for controlling any structural variations due to sample differences though the IFRS convergence time point. Panel A of Table 6.1 demonstrates the number of observations that meet the selection standards.

***Table 6.1: Sample selection and industry distribution***

### Panel A: Selection criteria

Total firm-year observations available on CSMAR from 2002 to 2010	14,610
Less: Firms in the financial industry	312
Observations with missing data to calculate accruals	795
Subtotal:	13,503
Less: Observations with ultimate owners' information unavailable	1,594
Final sample	11,909
Sample with Basu's measure available	10,591
Pseudo-balanced sample (restricted to firms listed no later than the year 2006)	10,997

### Panel B: Sample composition by industry and by ownership type

Industry	Full Sample		Pre-IFRS period				Post-IFRS period			
			SOEs		NSOEs		SOEs		NSOEs	
	%	#	%	#	%	#	%	#	%	#
Accommodation and catering industry	0.5	62	0.6	16	0.5	8	0.7	27	0.3	11
Agriculture, forestry, animal husbandry	1.6	193	1.4	40	1.6	28	1.6	64	1.9	61
Construction industry	2.6	304	2.6	72	1.8	33	3.1	129	2.2	70
Diversified industries	1.8	213	1.8	49	2.5	44	1.6	65	1.7	55
Education	0.1	9	0.1	4	0.0	0	0.1	5	0.0	0
Health and social work	0.1	15	0.0	0	0.2	4	0.0	0	0.3	11
Industry of culture, sports and entertainment	1.7	196	2.1	58	1.2	22	1.9	77	1.2	39
Industry of electric power, heat, gas and water supply	5.7	674	8.7	241	2.0	36	8.6	352	1.4	45
Industry of information transmission	3.2	375	1.9	54	4.1	73	2.0	81	5.2	167
Industry of resident service, repair and maintenance	0.1	9	0.0	0	0.2	4	0.0	0	0.2	5
Leasing and commercial service industry	1.3	149	1.3	35	1.2	21	1.2	50	1.3	43
Manufacturing industry	54.9	6,538	51.0	1,419	56.4	1,012	51.3	1,111	62.1	1,996
Mining industry	3.7	442	3.3	92	4.0	71	4.3	176	3.2	103
Real estate industry	9.0	1,066	7.9	219	13.2	237	7.2	296	9.8	314
Scientific research and technical service	0.2	18	0.0	0	0.2	4	0.1	4	0.3	10

Transport, storage and postal service	4.3	509	6.2	171	1.6	28	6.6	271	1.2	39
Water conservancy, environment and public service	1.1	131	1.6	44	0.5	8	1.6	64	0.5	15
Wholesale and retail industry	8.5	1,006	9.6	266	9.1	163	8.4	347	7.2	230

**Panel C: The number of companies over years**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Model	2002	2003	2004	2005	2006	2007	2008	2009	2010
Accrual model	1,036	1,103	1,170	1,267	1,278	1,361	1,477	1,532	1,685
Basu model	965	984	1,025	1,089	1,167	1,212	1,313	1,395	1,441

Note: The classification of industry is defined by China Securities Regulatory Commission (CSRC). Source is from:

[http://www.csrc.gov.cn/pub/csrc\\_en/newsfacts/release/201301/t20130118\\_220575.html](http://www.csrc.gov.cn/pub/csrc_en/newsfacts/release/201301/t20130118_220575.html)

The first column in Panel B of Table 6.1 shows a detailed distribution of companies in each industry, which is basically consistent with the industry composition of companies on CSMAR. The industry with the highest proportion is the manufacturing industry (54.9% of sample observations). The next four columns compare the industry distribution between SOEs and NSOEs (non-SOEs) in the periods before and after IFRS convergence. The proportion of NSOE firms increased in the post-IFRS period. This thesis finds a higher proportion of SOEs in the Electric Power, Services, Transportation and Utilities industries. In contrast, NSOEs are more inclined to enter the Real Estate, Conglomerates, and Information and Technology industries. This pattern of industry-based disparity between SOEs and NSOEs did not change after the year 2006. The distinction in industry distribution is consistent with common sense, since SOEs usually have advantages in the more asset-intensive and traditional industries, such as Transportation, Utilities and Mining, industries with higher entry barriers for NSOEs. Moreover, Panel C of Table 6.1 lists the number of companies for single year within sample period.

## 6.2 Descriptive statistics for conditional conservatism

This thesis provides descriptive statistical data on the characteristics of the companies in the full sample in Panel A of Table 6.2. The average accruals and operating cash flows are -0.06 and 0.09 respectively, which are comparable to previous studies. SOEs accounts for 57.9% of the sample, while companies with negative operating cash flow account for 29%. In this sample, the average financial leverage (0.72) is closer to the 90th percentile of leverage (0.76), indicating that there is a negatively skewed distribution in the financial leverage. Moreover, the average value of ROA even exceeds its 90th percentile, indicating that its distribution is more negatively skewed than the distribution of financial leverage.

**Table 6.2: Descriptive statistics**

**Panel A: Enterprise characteristics of the total sample**

	Mean	Std. Dev.	10 <sup>th</sup> Percentile	90 <sup>th</sup> Percentile	# of Obs.
<i>CFO</i>	0.09	0.23	-0.13	0.31	11,909
<i>DCFO</i>	0.29	0.46	0.00	1.00	11,909
<i>RET</i>	-0.13	0.71	-0.69	0.35	11,284
<i>DRET</i>	0.79	0.41	0.00	1.00	11,284
<i>ACCRUAL</i>	-0.06	0.20	-0.25	0.13	11,909
<i>NI</i>	0.01	0.05	-0.02	0.06	11,909
<i>LEV</i>	0.72	8.50	0.24	0.76	11,909
<i>ROA</i>	1.87	216.48	-0.03	0.90	11,909
<i>SIZE</i>	21.38	1.16	20.08	22.85	11,909
<i>SOE</i>	0.58	0.49	0.00	1.00	11,909

**Panel B: Comparison between SOEs and non-SOEs in the periods around IFRS convergence**

	<u>SOEs in pre-IFRS period</u>			<u>NSOEs in pre-IFRS period</u>			<u>NSOE-SOE</u>
	Mean	Median	# of Obs.	Mean	Median	# of Obs.	t value
<i>CFO</i>	0.07	0.06	2,780	0.03	0.04	1,796	-6.33***
<i>DCFO</i>	0.30	0.00	2,780	0.39	0.00	1,796	6.71***
<i>RET</i>	-0.02	-0.18	2,650	-0.02	-0.19	1,656	-0.10
<i>DRET</i>	0.73	1.00	2,650	0.71	1.00	1,656	-1.54
<i>ACCRUAL</i>	-0.04	-0.03	2,780	-0.03	-0.03	1,796	2.68**
<i>NI</i>	0.01	0.01	2,780	0.00	0.01	1,796	-9.04***
<i>LEV</i>	0.52	0.48	2,780	0.59	0.52	1,796	2.57**
<i>ROA</i>	0.01	0.03	2,780	-0.02	0.02	1,796	-5.07***
<i>SIZE</i>	21.35	21.67	2,780	20.87	20.86	1,796	-17.77***
	<u>SOEs in post-IFRS period</u>			<u>NSOEs in post-IFRS period</u>			

<i>CFO</i>	0.12	0.08	4,119	0.10	0.07	3,214	-4.15***
<i>DCFO</i>	0.24	0.00	4,119	0.30	0.00	3,214	5.97***
<i>RET</i>	-0.20	-0.28	3,956	-0.18	-0.31	3,022	0.73
<i>DRET</i>	0.83	1.00	3,956	0.82	1.00	3,022	-0.59
<i>ACCRUAL</i>	-0.08	-0.05	4,119	-0.06	-0.03	3,214	4.14***
<i>NI</i>	0.02	0.02	4,119	0.14	0.14	3,214	-5.68***
<i>LEV</i>	0.61	0.54	4,119	1.10	0.50	3,214	1.94*
<i>ROA</i>	0.03	0.03	4,119	6.87	0.04	3,214	1.05
<i>SIZE</i>	21.86	21.72	4,119	21.08	21.04	3,214	-27.90***

Note: *ACC* stands for the accruals of company *i* in year *t*, and is defined as (earnings before extraordinary items–operating cash flow) /average total assets. *CFO* stands for the cash flow from operation, which is defined as [earnings before extraordinary items + depreciation – Δ(working capital)] /average total assets. Δ(working capital) is measured as Δ(current assets) –Δ(current liability) +Δ(current portion of long-term liability) –Δ(cash). *DCFO* is a dummy variable, which is equal to one if *CFO* < 0 and equal to 0 if otherwise. *LEV* is the financial leverage equal to total liability over total assets. *ROA* which equals earnings before interest and tax divided by total assets proxies the firm’s profitability. This thesis measures *SIZE* with the natural logarithm of the total assets at the beginning of the corresponding year for each company. *SOE* is one if the company is eventually controlled by government and zero otherwise.

Panel B of Table 6.2 provides descriptive statistics for SOEs and NSOEs separately. The differences between NSOEs and SOEs are more pronounced in the period prior to the year 2006. Before 2006, NSOEs typically generated less cash flow from operations, reported larger accounting accrual numbers, suffered from more severe financial stress, experienced more economic losses, and had smaller firm sizes compared to their SOE counterparts. However, those differences, except for negative cash flow and firm size, disappeared after 2006. The non-tabulated results demonstrate that this intertemporal pattern also exists for the pseudo-balanced sample. The systematic changes in NSOEs’ firm-specific features could contribute to the differences in accounting conservatism observed.

### 6.3 Data and sample for unconditional conservatism

The initial sample includes all companies listed – and included in the CSMAR database - on the Shanghai and Shenzhen Stock Exchanges from 1996 to 2010. Among them, 1996 to 2001 is the estimation period (due to the lagged annual share returns in the past six years used by the BTM measurement method), whereas 2002 to 2010 is the sample period.



312 firm-years in the financial industry and 267 observations with a negative BTM ratio were eliminated. Of the remaining 13,513 observations, 6,737 missing observations for the book value-to-market value ratio and annual share returns were deleted. Due to the elimination of companies with consecutive listing records of less than seven years, the sample may have a survival bias. The final sample consists of 6,776 firm-year observations.

## 6.4 Descriptive statistics for unconditional conservatism

This thesis provides descriptive statistical data on the characteristics of firms in Panel A of Table 6.4. Table 6.4 describes the statistical properties of variables used by equation (5). The mean values of book value of equity (BV) and market value of equity (MV) in this sample are much higher than their median, suggesting that the distribution of BV and MV are heavily skewed to the right. This indicates that in this sample, most companies are smaller than the average size, while a small portion of the companies operate on a very large scale. As a result of the influence of these few large-scale companies, the mean values of BV and MV are larger than the median. The skewness of BTM is much lower than BVE and MVE, thereby suggesting that it is closer to a normal distribution.

**Table 6.4: Descriptive statistics**

**Panel A: Firm characteristics of the full sample**

	Mean	Std. Dev.	10 <sup>th</sup> Percentile	50 <sup>th</sup> Percentile	90 <sup>th</sup> Percentile	Skewness	# of Obs.
<i>MV (Billion)</i>	6.56	22.6	0.80	2.71	12.8	31.38	6,776
<i>BV (Billion)</i>	2.37	10.3	0.25	1.02	4.29	30.19	6,776
<i>RET</i>	-0.01	1.23	-0.09	-0.01	0.06	3.11	6,776
<i>BTM</i>	0.43	0.29	0.13	0.35	0.84	1.27	6,776
<i>SOE</i>	0.67	0.47	0	1	1	-0.71	6,776

**Panel B: Comparison between SOEs and non-SOEs in the periods around IFRS convergence**

	SOEs in pre-IFRS period			NSOEs in pre-IFRS period		
	Mean	Median	# of Obs.	Mean	Median	# of Obs.
<i>MV (Billion RMB)</i>	2.91	1.72	1,358	1.70	1.14	731
<i>BV (Billion RMB)</i>	1.53	0.89	1,358	0.79	0.46	731
<i>RET</i>	-0.06	-0.03	1,358	0.03	-0.03	731

<i>BTM</i>	0.57	0.51	1,358	0.48	0.42	731
	<u>SOEs in post-IFRS period</u>			<u>NSOEs in post-IFRS period</u>		
<i>MV (Billion)</i>	9.67	4.10	3,160	5.72	2.93	1,520
<i>BV (Billion)</i>	3.45	1.37	3,160	1.62	0.85	1,520
<i>RET</i>	-0.04	0.05	3,160	0.01	0.01	1,520
<i>BTM</i>	0.40	0.32	3,160	0.34	0.28	1,520

**Panel C: The number of companies over years**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Model	2002	2003	2004	2005	2006	2007	2008	2009	2010
BTM model	278	483	626	704	768	901	941	1,004	1,071

Note: MV and BV represent the market value of equity and the book value of equity respectively. RET represents the firms' economic performance, which is calculated as market returns on equity over the fiscal year adjusted by share distributions. BTM respects the book value-to-market value ratio of the firms. SOE is equal to one if the company is eventually controlled by government and zero otherwise.

Panel B of Table 6.4 illustrates descriptive statistics for SOEs and NSOEs, respectively. Panel C of Table 6.4 lists the number of companies for single year within the sample period. In many previous researches, BTM often directly serves as an indicator of unconditional conservatism. Although this has been already discussed in the previous section, it may cause deviations if a distinction is not established between the bias and the lags components in the BTM. However, the BTM ratio can still provide some preliminary judgment. From Panel B of Table 6.4, it can be found that the BTM of both SOEs and NSOEs reduced posterior to the implementation of new Chinese standards in 2006 and the reduction of SOEs is higher than NSOEs(lower BTM ratio, higher conservatism), suggesting that the new Chinese standards of 2006 enhances the unconditional conservatism of China's listed companies. It also illustrates that this effect is more obvious for SOEs situated in China. It is consistent with the sixth and seventh hypotheses. Since it has been proved in the previous section that the IFRS-convergent in 2006 reduced the conditional conservatism, this preliminary conclusion is rendered more credible.

# Chapter Seven: Main empirical findings for conditional conservatism

## 7.1 Descriptive evidence for impacts of IFRS convergence

Prior to formal regressive analyses, this thesis first used descriptive evidence to test the impact of IFRS convergence. This thesis employs regression equation (1) to measure the conditional conservatism of the whole market for a single year; the results are reported in Table 7.1.1.

**Table 7.1.1: Conditional conservatism over years**

**Panel A: Full sample based on Accrual-based measure**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIAB	2002	2003	2004	2005	2006	2007	2008	2009	2010
LES									
<i>CFO</i>	-0.92** *	-0.95** *	-0.81** *	-0.88** *	-0.77** *	-0.75** *	-0.65** *	-0.83** *	-0.86** *
	(0.023)	(0.012)	(0.015)	(0.018)	(0.015)	(0.013)	(0.015)	(0.009)	(0.011)
<i>DCFO</i>	-0.00	0.01	-0.01	-0.02** *	-0.02** *	0.02* *	0.02** *	-0.02** *	-0.00
	(0.008)	(0.005)	(0.006)	(0.006)	(0.006)	(0.010)	(0.007)	(0.005)	(0.006)
<i>DCFO*</i>	<b>0.27***</b>	<b>0.28***</b>	<b>0.09***</b>	<b>0.21***</b>	<b>0.00***</b>	<b>0.12***</b>	<b>-0.00</b>	<b>0.01***</b>	<b>0.02***</b>
<i>CFO</i>	<b>(0.013)</b>	<b>(0.013)</b>	<b>(0.011)</b>	<b>(0.010)</b>	<b>(0.000)</b>	<b>(0.035)</b>	<b>(0.001)</b>	<b>(0.002)</b>	<b>(0.005)</b>
Constant	0.02*** (0.005)	0.04*** (0.003)	0.02*** (0.003)	0.02*** (0.003)	0.01*** (0.004)	0.00 (0.005)	-0.00 (0.004)	0.02*** (0.003)	0.03*** (0.003)
# of Obs.	1,036	1,103	1,170	1,267	1,278	1,361	1,477	1,532	1,685
Adj. R <sup>2</sup>	0.743	0.920	0.824	0.782	0.772	0.764	0.702	0.875	0.846

**Panel B: Pseudo-balanced sample based on Accrual-based measure**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIAB	2002	2003	2004	2005	2006	2007	2008	2009	2010
LES									
<i>CFO</i>	-0.92** *	-0.95** *	-0.81** *	-0.88** *	-0.77** *	-0.75** *	-0.63** *	-0.82** *	-0.84** *
	(0.023)	(0.012)	(0.015)	(0.018)	(0.015)	(0.013)	(0.016)	(0.010)	(0.013)
<i>DCFO</i>	-0.00	0.01	-0.01	-0.02**	-0.02**	0.01	0.02**	-0.02**	-0.01

				*	*			*	
	(0.008)	(0.005)	(0.006)	(0.006)	(0.006)	(0.011)	(0.008)	(0.006)	(0.008)
<b>DCFO*</b>	<b>0.27***</b>	<b>0.28***</b>	<b>0.09***</b>	<b>0.21***</b>	<b>0.00***</b>	<b>0.11***</b>	<b>-0.00</b>	<b>0.01***</b>	<b>0.02***</b>
<b>CFO</b>									
	(0.013)	(0.013)	(0.011)	(0.010)	(0.000)	(0.036)	(0.001)	(0.002)	(0.006)
Constant	0.02***	0.04***	0.02***	0.02***	0.01***	0.00	-0.01*	0.01***	0.02***
	(0.005)	(0.003)	(0.003)	(0.003)	(0.004)	(0.005)	(0.005)	(0.003)	(0.004)
# of Obs.	1,036	1,103	1,170	1,267	1,278	1,277	1,277	1,277	1,276
Adj. R <sup>2</sup>	0.743	0.920	0.824	0.782	0.772	0.758	0.674	0.872	0.816

**Panel C: Full sample based on Basu's measure**

	(1)	(2)
VARIABLES	2002-2005	2007-2010
<i>DRET</i>	0.00 (0.002)	0.00 (0.003)
<i>RET</i>	-0.00 (0.001)	0.00 (0.001)
<b><i>DRET*RET</i></b>	<b>0.06***</b> <b>(0.005)</b>	<b>0.03***</b> <b>(0.003)</b>
Constant	0.02*** (0.002)	0.03*** (0.002)
Observations	4,063	5,361
R-squared	0.052	0.023

**Panel D: Pseudo-balanced sample based on Basu's measure**

	(1)	(2)
VARIABLES	2002-2005	2007-2010
<i>DRET</i>	0.00 (0.002)	0.00 (0.003)
<i>RET</i>	-0.00 (0.001)	0.00 (0.001)
<b><i>DRET*RET</i></b>	<b>0.06***</b> <b>(0.005)</b>	<b>0.03***</b> <b>(0.003)</b>
Constant	0.02*** (0.002)	0.03*** (0.003)
Observations	4,063	4,809
R-squared	0.052	0.024

Notes: Panel A and B report results over years based on accrual-based measure of firms' conservatism. Panel C and D report results over years based on Basu's measure of firms'

conservatism. For Panel A and B, column 1 to 9 report the accrual-based conditional conservatism from the year 2002 to 2010. The baseline regression model is established by Ball and Shivakumar (2005), and can be adopted to evaluate conditional conservatism for the companies whose share return information is not available or reliable. *ACC* stands for the accruals of company *i* in year *t*, and is defined as (earnings before extraordinary items–operating cash flow) /average total assets. *CFO* stands for the cash flow from operation, which is defined as [earnings before extraordinary items + depreciation –  $\Delta(\text{working capital})$ ] /average total assets.  $\Delta(\text{working capital})$  is measured as  $\Delta(\text{current assets}) - \Delta(\text{current liability}) + \Delta(\text{current portion of long-term liability}) - \Delta(\text{cash})$ . *DCFO* is a dummy variable, which is equal to one if  $\text{CFO} < 0$  and equal to 0 if otherwise. For Panel C and D, column 1 presents Basu’s conditional conservatism from the year 2002 to 2005, while column 2 presents Basu’s conditional conservatism from the year 2007 to 2010. The supplementary regression method is a classical approach developed by Basu (1997), assuming firms’ share return denotes its true economic performance. This thesis does not present Basu’s conservatism for a single year because Ball et al. (2013) suggested that a longer horizon of share return could mitigate concerns about potential informational inefficiency of security prices. *RET* represents firms’ true economic performance, which is calculated as firms’ accumulative share return adjusted by market return in corresponding periods. The share return is estimated considering reinvestment of cash dividends. *DRET* is a dummy variable, which is equal to one if  $\text{RET} < 0$  and equal to 0 if otherwise. The dependent variable is *EP*, which is measured as earning per share divided by share price in the beginning of the period. The standard errors are shown in the parentheses. All continuous variables are winsorized at 1% level. \*, \*\*, \*\*\* represent that statistical results are significant at 10%, 5% and 1%, respectively.

As Table 7.1.1 shows, the coefficients of *DCFO*\**CFO* are significantly positive at 1% level in pre-2006 periods, indicating that when cash flows are negative, the negative correlation between cash flows and accruals is alleviated. This illustrates that, before the implementation of IFRS-based standards, companies in this sample recognised unrealised losses in accruals in a more timely manner than unrealised gains. Conversely, the level of conditional conservatism rapidly reduced after the implementation of IFRS-based standards, which is consistent with the first hypothesis.

It is possible that the systematic conditional conservatism differences between pre- and post-2006 periods are driven by the intertemporal variances in the composition of public companies in China. After the year 2006, China speeded up its capital market development, and more and more firms were listed on China’s domestic stock exchanges. Considering the possibility that those new IPO firms in China caused the decline in conditional conservatism after 2006, this thesis repeated the regression of Panel A for a pseudo-balanced sample which

consists of only those firms that went public before the year 2006. The results are reported in Panel B of Table 7.1.1 and are consistent with Panel A, indicating that the newly listed firms did not drive the observed differences around IFRS convergence after the year 2006.

Although there have been criticisms regarding the approach of Basu's (1997) measure of conditional conservatism, Ball et al. (2013) argued that compared to other conservatism measures, Basu's regression produces valid measures of conditional conservatism, not only due to its intuitive appeal but also its rigorous analysis. Therefore, this thesis additionally reports the results over years based on Basu's measure of firms' conservatism in Panel C and D. This thesis does not present Basu's conservatism for single year because Ball et al. (2013) suggested that a longer horizon of share return could mitigate concerns about potential informational inefficiency of security prices, which is one feature of China's stock market within this sample period.

As Panel C shows, the coefficients on  $DRET*RET$  are significantly positive at the 1% level in pre-2006 periods, suggesting that the positive correlation between earnings and share return is strengthened when share returns are negative. This finding illustrates that in the period before the implementation of IFRS-based standards, companies in this sample more timely recognised losses related to bad news in earnings than gains related to good news in terms of Basu's conservatism measure. In contrast, the magnitude of  $DRET*RET$  rapidly reduced after the implementation of IFRS-based standards, which is consistent with the first hypothesis. The results in Panel D, which are based on the pseudo-balanced sample and Basu's conservatism measure, are similar to Panel C.

**Figure 7.1.1: Accrual-based and Basu's conservatism over years of 2002-2010**

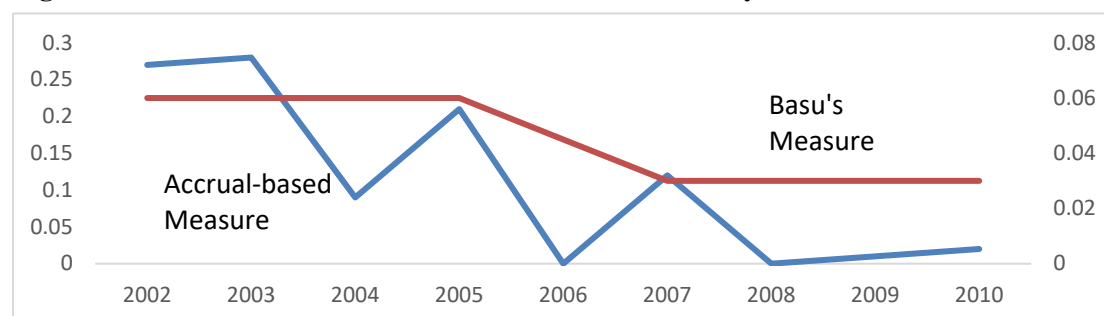


Figure 7.1.1 shows the pattern of accrual-based and Basu's conditional conservatism within the sample over the years. The left vertical axis denotes the estimated coefficient of the accrual-based conservatism measure each year, while the right vertical axis denotes the estimated coefficient of Basu's conservatism measure. Without considering the statistical significance, the coefficients of conditional conservatism in both the accrual cash flow and Basu models significantly decreased after the implementation of IFRS-based standards. Therefore, the descriptive statistical result can preliminarily prove the first hypothesis. In the following sections, this thesis will conduct a formal regression analysis to further prove the first hypothesis.

## 7.2 Regressive evidence for impacts of IFRS convergence

For the purpose of examining the first hypothesis, this thesis ran the results on equation (3) and equation (4) discussed earlier in the thesis. The thesis further examined the impact of IFRS-based standards with regressive evidence from the accrual-cash flow and Basu's measures models. This sample includes Chinese public companies from 2002 to 2010. In addition, the interaction between the degree of conditional conservatism and IFRS dummy variables can be employed to measure the impact of IFRS-based standards. The results for these OLS regressions are listed in Table 7.2.1.

**Table 7.2.1: Change in conditional conservatism measured by Accrual Cash flow model pre- and post-IFRS adoption**

**Panel A: The results without controlling other factors**

VARIABLES	(1) Accrual-based Measure	VARIABLES	(2) Basu's Measure
<i>CFO</i>	-0.80*** (0.004)	<i>RET</i>	0.00 (0.001)
<i>DCFO</i>	0.01*** (0.003)	<i>DRET</i>	-0.01*** (0.002)
<i>DCFO * CFO</i>	<b>0.18*** (0.006)</b>	<i>DRET*RET</i>	<b>0.04*** (0.003)</b>
<i>IFRS * CFO</i>	0.00***	<i>IFRS*RET</i>	0.02***

	(0.000)		(0.001)
<i>IFRS * DCFO</i>	-0.02***	<i>IFRS*DRET</i>	0.01***
	(0.003)		(0.001)
<b><i>IFRS * DCFO * CFO</i></b>	<b>-0.18***</b>	<b><i>IFRS*DRET*RET</i></b>	<b>-0.03***</b>
	<b>(0.006)</b>		<b>(0.003)</b>
Constant	0.01***	Constant	0.02***
	(0.001)		(0.001)
# of Obs.	11,909	# of Obs.	10,591
Adj. R <sup>2</sup>	0.810	Adj. R <sup>2</sup>	0.066

**Panel B: The results when controlling other factors**

	(1)		(2)
VARIABLES	Accrual-based Measure	VARIABLES	Basu's Measure
<i>CFO</i>	-0.47***	<i>RET</i>	-0.01
	(0.071)		(0.019)
<i>DCFO</i>	0.04	<i>DRET</i>	-0.08**
	(0.038)		(0.031)
<b><i>DCFO * CFO</i></b>	<b>0.14***</b>	<b><i>DRET*RET</i></b>	<b>0.07</b>
	<b>(0.006)</b>		<b>(0.043)</b>
<i>IFRS</i>	0.00	<i>IFRS</i>	0.00
	(0.002)		(0.002)
<i>IFRS * CFO</i>	-0.04***	<i>IFRS*RET</i>	0.02***
	(0.011)		(0.001)
<i>IFRS * DCFO</i>	-0.02***	<i>IFRS*DRET</i>	0.00
	(0.003)		(0.003)
<b><i>IFRS*DCFO*CFO</i></b>	<b>-0.10***</b>	<b><i>IFRS*DRET*RET</i></b>	<b>-0.02***</b>
	<b>(0.012)</b>		<b>(0.003)</b>
<i>SIZE</i>	0.01***	<i>SIZE</i>	0.010***
	(0.001)		(0.001)
<i>SIZE*CFO</i>	-0.02***	<i>SIZE* RET</i>	0.00
	(0.003)		(0.001)
<i>SIZE*DCFO</i>	-0.00	<i>SIZE*DRET</i>	0.00**
	(0.002)		(0.001)
<i>SIZE*DCFO *CFO</i>	0.01***	<i>SIZE*DRET*RET</i>	-0.002
	(0.001)		(0.002)
<i>MB</i>	0.01***	<i>MB</i>	0.002***
	(0.001)		(0.000)
<i>MB*CFO</i>	0.02***	<i>MB*RET</i>	-0.000
	(0.002)		(0.000)
<i>MB*DCFO</i>	-0.01***	<i>MB*DRET</i>	0.003***
	(0.001)		(0.001)
<i>MB*DCFO *CFO</i>	-0.02***	<i>MB*DRET*RET</i>	0.005***



	(0.002)		(0.001)
<i>LEV</i>	-0.02***	<i>LEV</i>	-0.01***
	(0.003)		(0.003)
<i>LEV*CFO</i>	-0.00	<i>LEV*RET</i>	0.00
	(0.006)		(0.003)
<i>LEV*DCFO</i>	0.01***	<i>LEV*DRET</i>	-0.00
	(0.003)		(0.003)
<i>LEV*DCFO *CFO</i>	-0.01*	<i>LEV*DRET*RET</i>	-0.01***
	(0.007)		(0.003)
<i>Constant</i>	-0.27***	<i>Constant</i>	-0.19***
	(0.021)		(0.025)
Observations	11,659	Observations	10,411
R-squared	0.865	R-squared	0.159

Notes: Panel A and B report results of the effects of the state ownership of firms without and with controlling other factors including company size (SIZE), market value to book value ratio (MB) and financial leverage (LEV), respectively. Column 1 stands for the impacts of IFRS-based standards on the level of conditional conservatism based on the Accrual-based measure. The baseline regression models established by Ball and Shivakumar (2005) are used to evaluate conditional conservatism for the companies whose share return information is not available or reliable. *ACC* stands for the accruals of company *i* in year *t*, and is defined as (earnings before extraordinary items—operating cash flow) /average total assets. *CFO* stands for the cash flow from operation, which is defined as [earnings before extraordinary items + depreciation – Δ(working capital)] /average total assets. Δ(working capital) is measured as Δ(current assets) –Δ(current liability) +Δ(current portion of long-term liability) –Δ(cash). *DCFO* is a dummy variable, which is equal to one if *CFO* < 0 and zero otherwise. Column 2 presents the impacts of IFRS-based standards on the degree of conditional conservatism measured by Basu’s model. The supplementary regression model is a classical approach developed by Basu (1997) assuming a firm’s share return denotes its true economic performance. *RET* represents a firm’s true economic performance, which is calculated as a firm’s accumulative share return adjusted by market return in corresponding period. The share return is estimated considering reinvestment of cash dividends. *DRET* is a dummy variable, which is equal to one if *RET* < 0 and equal to 0 and zero otherwise. The dependent variable is *EP*, which is measured as earning per share divided by share price in the beginning of the period. *IFRS* is a dummy variable, which is equal to one if Chinese-listed firms adopt IFRS-based new standards and equal to 0 if otherwise. \*, \*\*, \*\*\* represents that statistical results are significant at 10%, 5% and 1%, respectively.

Table 7.2.1 presents the statistical results supporting the first hypothesis. Column 1 reports the impact of IFRS adoption on the level of accrual-based conservatism. The foremost conclusion of column 1 in Panel A is that the conditional conservatism of Chinese public companies reduced from 0.18 to 0.00 after adopting IFRS-based accounting standards. The coefficient on *DCFO\*CFO* is significantly positive at 1% level, indicating that the negative correlation

between accruals and cash flows is reduced when cash flows are negative. This indicates that, on average, the companies in the sample recognised unrealised losses via accruals more quickly than unrealised gains. The coefficient on  $IFRS*DCFO*CFO$  is -0.18 and significantly negative at 1% level. As mentioned above, this coefficient stands for the change in the level of conditional conservatism in the post-IFRS convergence period. As a result, compared to the pre-IFRS convergence period, firms in the post-IFRS convergence period accrued unrealised losses in cash-loss years more slowly than unrealised gains in cash-profit years. The findings in column 1 are in line with the first hypothesis - that Chinese public companies issued less conservative financial statements after the implementation of IFRS-based standards in 2006.

Column 2 indicates the influences of IFRS-based standards on the level of Basu's conditionally conservative accounting. The foremost conclusion in column 2 of Panel A is that Basu's conditional conservatism in the Chinese public enterprises declined from 0.04 to 0.01 after the implementation of IFRS-based standards. The coefficient on  $DRET*RET$  is positive and statistically significant at 1% level, suggesting that the positive correlation between earnings and share returns is alleviated when share returns are negative. This indicates that, on average, the firms in our sample recognised unrealised losses via earnings in a timelier manner than unrealised gains. However, the estimated parameter of  $IFRS * DRET * RET$  is -0.03 at 1% significance level. Therefore, compared to the pre-convergence period, the market in the post-convergence period follows conditional conservatism to a lesser extent. The findings in columns 1 and 2 are in line with the first hypothesis – that public companies in China issued less conservative financial statements after the implementation of IFRS-based standards in 2006. Thus, the empirical findings for the first hypothesis are robust to different choices of conditional conservatism estimates.

The results in Table 7.2.1 are comparable with the findings of André et al. (2015) regarding the effects of IFRS convergence on conditionally conservative accounting. They provided evidence that the level of conditional conservatism in the European market dropped significantly from 0.038 to 0.007, after adopting IFRS. Their analyses relied on the firm-year level measurement suggested by Khan and Watts (2009), which is an extension of the

traditional Basu measure. Qualitatively, this thesis draws the same conclusion as André et al. (2015) - that companies issued less conservative financial statements after IFRS convergence.

Given that company size (SIZE), market-to-book value ratio (MB), and financial leverage (LEV) in previous research are usually considered the determinants of conditional conservatism, this thesis introduces these factors with their respective interactions and reports the results in Panel B. A comparison of the two panels finds that the results of Panel B show a higher adjusted R-squared, suggesting that the controlled variables can improve the explanatory power of both models. Panel B displays the results of accrual-based and Basu's measurements after other factors are controlled, which are still consistent with the results achieved when the other factors affecting conditional conservatism are not controlled. To control the effect of changes in the economic environment during the sample period and the impact of different industries, this thesis also introduces the year and industry variables as control variables; the results remain the same (un-tabulated).

Considering the possibility of confounding events in the post-convergence period leading the results in Table 7.2.1, this thesis takes measures to shorten the sample period. In order to alleviate the potential noises, this thesis carried out the main tests over a shorter window, where the pre-IFRS-adoption period started in 2003 and the post-IFRS-adoption period ended in 2008<sup>2</sup>. Table 7.2.2 reports sensitive results based on a shorter window from 2003 to 2008.

***Table 7.2.2: Shorter window around IFRS-adoption (from 2003 to 2008)***

VARIABLES	(1)	VARIABLES	(2)
	Accrual-based Measure		Basu's Measure
<i>DCFO</i>	0.02*** (0.003)	<i>DRET</i>	-0.01*** (0.003)
<i>CFO</i>	-0.77*** (0.006)	<i>RET</i>	0.00 (0.002)

<sup>2</sup> This thesis also tried even a shorter window around the event year or excluded the transition period of IFRS convergence. The results, which are non-tabulated due to the length limitation, are similar to this main report.

<i>DCFO * CFO</i>	<b>0.14***</b> <b>(0.008)</b>	<i>DRET*RET</i>	<b>0.04***</b> <b>(0.004)</b>
<i>IFRS * DCFO</i>	-0.03*** (0.004)	<i>IFRS*DRET</i>	0.02*** (0.002)
<i>IFRS * CFO</i>	0.00*** (0.000)	<i>IFRS*RET</i>	0.02*** (0.002)
<i>IFRS * DCFO * CFO</i>	<b>-0.14***</b> <b>(0.008)</b>	<i>IFRS*DRET*RET</i>	<b>-0.03***</b> <b>(0.003)</b>
Constant	0.01*** (0.002)	Constant	0.02*** (0.002)
# of Obs.	7,656	# of Obs.	6,790
Adj. R <sup>2</sup>	0.793	Adj. R <sup>2</sup>	0.071

Notes: Column 1 illustrates the impacts of new Chinese standards on the degree of conditional conservatism based on the Accrual-based measure. The baseline regression model established by Ball and Shivakumar (2005) is used to evaluate conditional conservatism for the companies whose share return information is not available or reliable. *ACC* stands for the accruals of company *i* in year *t*, and is defined as (earnings before extraordinary items—operating cash flow) /average total assets. *CFO* stands for the cash flow from operation, which is defined as [earnings before extraordinary items + depreciation – Δ(working capital)] /average total assets. Δ(working capital) is measured as Δ(current assets) –Δ(current liability) +Δ(current portion of long-term liability) – Δ(cash). *DCFO* is a dummy variable, which is equal to one if *CFO* < 0 and equal to 0 if otherwise. Column 2 stands for the impacts of IFRS-based standards on the level of conditional conservatism based on Basu’s measure. The supplementary regression model is a classical approach developed by Basu (1997) assuming firm’s share return denotes its true economic performance. *RET* represents firm’s true economic performance, which is calculated as firm’s accumulative share return adjusted by market return in corresponding period. The share return is estimated considering reinvestment of cash dividends. *DRET* is a dummy variable, which is equal to one if *RET* < 0 and equal to 0 if otherwise. The dependent variable is *EP*, which is measured as earning per share divided by share price in the beginning of the period. *IFRS* is a dummy variable, which is equal to one if Chinese-listed firms adopt IFRS-based new standards and equal to 0 if otherwise. The standard errors are shown in the parentheses. \*, \*\*, \*\*\* represent that statistical results are significant at 10%, 5% and 1%, respectively.

The result in Table 7.2.2 is similar to Table 7.2.1. The coefficient on *IFRS\*DCFO\*CFO* at 1% significance level is -0.14. Therefore, compared to the pre-IFRS-adoption period, companies in the post-IFRS-adoption period accrued unrealised losses in cash-loss years in a less timely manner than unrealised gains in cash-profit years, which are still consistent with the first hypothesis of this thesis: *Chinese public companies employ less conditionally conservative accounting policy in the post-implementation of IFRS-based standards in 2006.*

### **7.3 Moderating effects of ex-ante information asymmetry**

It is critical to investigate the in-depth mechanism through which the IFRS convergence has affected the conditional conservatism choices of firms. Particularly, this thesis examines whether the ex-ante information asymmetry, which shaped the conditional conservatism demands (LaFond and Watts, 2008), would have a moderating function between IFRS convergence and conditional conservatism. This thesis partitioned firms into two and four subgroups based on their ex-ante information asymmetry, proxied by the business model complexity of enterprises.

The ex-ante information asymmetry of enterprises is a complex issue. Information disclosure levels, information transmission mechanisms and information interpretation capabilities have led to information asymmetry in the capital markets in different ways. The information asymmetry faced by traders in the market is difficult to quantify. The information asymmetry is mainly based on the existence of informed trading, but informed trading is also difficult to observe and identify. [Informed trading refers to the trading behaviour of the informed traders using the private information owned by them to conduct stock trading (Bagehot, 1971; Brody et al., 2009). The private information here mainly includes information regarding the changes in the share value obtained through securities analysis, inside information, etc.]

The bid-ask spread measurement and the probability of informed trading (PIN) measurement as two mainstream measurement methods have been widely used in related research. By calculating bid-ask spreads, the LSB model (Booth et al., 1995), the EKOP model (Easley et al., 1996) and the MRR model (Madhavan, et al 1997) are relatively mature models for measuring information asymmetry. Later, Corwin and Schultz (2012) simplified these previous models. Paperman (1996) and Easley et al. (1996) proposed a model that uses the binary tree to characterise the entire trading process of stocks, which is the PIN model for measuring the probability of informed trading. They employed the transaction data of NYSE stocks as a research sample to estimate the probability of the informed trading of each stock. They found that the probability of informed trading is lower for stocks with more active

transactions, while the probability of informed trading for stocks with less active stocks is relatively higher. After many years of verification, the PIN model became a classic model for measuring informed trading.

However, both bid-ask spread and PIN models require the high-frequency data in the capital market. Both generally require the capital market to be a quote-driven and market-maker market. (Market makers refer to securities trading companies with reputations as franchise dealers in the securities market, which continuously report the buying and selling price – i.e. a two-way quotation – of certain securities to the public investors, and at that price accept the trading requirements of the public investors. Quote-driven market means the market relying on market makers to conduct securities transactions. For example, New York Stock Exchange is a quote-driven and market-maker market.) However, China's capital market is an order-driven market, and there are no market makers in the market. Therefore, the applicability of these models in China's capital market may be limited. Additionally, if the information asymmetry is measured by the bid-ask spread or PIN on the basis of the high-frequency data, it is necessary to construct panel data with a large time span. The abnormally large amount of data makes the workload large, which in turn increases the research difficulty.

Because of the influence of other factors in the market, the bid-ask spread only roughly measures the degree of information asymmetry. Moreover, since the bid-ask spread method and PIN method are based on the market maker market, the bid-ask spread method and PIN method in theory are less suitable for measuring the information asymmetry of the Chinese order-driven market. If the limit order of many investors under China's order-driven system is equated with the purchase order provided by a market maker, it might be reasonable for the bid-ask spread and the PIN to be applied to China's order-driven system. However, the accuracy of these models measuring the information asymmetry in China is yet to be verified.

Due to the lack of high frequency data and questioning the applicability of the bid-ask spread and the PIN method in China, this thesis adopts other indirect methods to measure the degree

of information asymmetry faced by traders in the market as a proxy variable for information asymmetry, such as MB and cash flow volatility.

Smith and Watts (1992) argued that managers of growth companies have an advantage over the average investor in terms of information of investment opportunities and the future cash flows generated by the companies' existing assets. Therefore, the companies' investment opportunities can be used as a substitute variable for information asymmetry. As companies have higher growth, the company's managers or insiders have better information about the company's value than the average investor. Therefore, there is a positive association between the growth of companies and information asymmetry. Melaughlin et al. (1998) used the ratio of book value to market value to measure a company's future growth as proxy variables for information asymmetry.

Since obtaining such information is costly, the volatility of cash flow positively correlates with information asymmetry (Goel and Thakor, 2003). As firm's cash flows become more volatile, it becomes harder to monitor management. Furthermore, it is more difficult for the outsiders to acquire information regarding a company's true value and its performance. This in turn will exacerbate information asymmetries between managers and outsiders. Therefore, the volatility of cash flow can be used to a certain extent as proxy variables for information asymmetries. Table 7 reports the results of the moderating effects of ex-ante information asymmetry that is measured by MB and cash flow volatility.

**Table 7.3: The ex-ante information asymmetry's moderating effects**

**Panel A: The ex-ante information asymmetry is measured by MB**

VARIABLES	Accrual-based Measure		VARIABLES	Basu's Measure	
	High Complexity	Low Complexity		High Complexity	Low Complexity
	(1)	(2)		(3)	(4)
<i>CFO</i>	-0.75*** (0.008)	-0.90*** (0.006)	<i>RET</i>	-0.00 (0.002)	0.00 (0.001)
<i>DCFO</i>	0.02* (0.001)	-0.00 (0.002)	<i>DRET</i>	-0.00 (0.005)	-0.00 (0.002)
<b><i>DCFO * CFO</i></b>	<b>0.18***</b> (0.009)	<b>0.16***</b> (0.011)	<b><i>DRET*RET</i></b>	<b>0.04***</b> <b>(0.004)</b>	<b>0.03***</b> <b>(0.003)</b>
<i>IFRS * CFO</i>	0.00*** (0.000)	-0.01 (0.013)	<i>IFRS*RET</i>	0.02*** (0.002)	0.03*** (0.003)
<i>IFRS * DCFO</i>	-0.03*** (0.008)	-0.00 (0.004)	<i>IFRS*DRET</i>	0.00 (0.005)	0.01*** (0.003)
<b><i>IFRS * DCFO * CFO</i></b>	<b>-0.18***</b> <b>(0.009)</b>	<b>-0.06***</b> <b>(0.0207)</b>	<b><i>IFRS*DRET*RET</i></b>	<b>-0.03***</b> <b>(0.003)</b>	<b>-0.02***</b> <b>(0.005)</b>
Constant	0.01*** (0.004)	0.02*** (0.001)	Constant	0.01*** (0.004)	0.02*** (0.002)
# of Obs.	5,300	6,609	# of Obs.	4,553	6,038
Adj. R <sup>2</sup>	0.740	0.919	Adj. R <sup>2</sup>	0.082	0.055

**Panel B: The ex-ante information asymmetry is measured by cash flow volatility**



VARIABLES	Accrual-based Measure		VARIABLES	Basu's Measure	
	High Complexity	Low Complexity		High Complexity	Low Complexity
	(1)	(2)		(3)	(4)
<i>CFO</i>	-0.80*** (0.006)	-0.81*** (0.010)	<i>RET</i>	0.00 (0.002)	-0.00 (0.001)
<i>DCFO</i>	0.01** (0.005)	0.01*** (0.003)	<i>DRET</i>	-0.00 (0.004)	-0.00 (0.002)
<b><i>DCFO * CFO</i></b>	0.18*** (0.009)	0.16*** (0.030)	<b><i>DRET*RET</i></b>	0.04*** (0.004)	0.03*** (0.003)
<i>IFRS * CFO</i>	0.00*** (0.000)	0.02** (0.012)	<i>IFRS*RET</i>	0.02*** (0.002)	0.02*** (0.002)
<i>IFRS * DCFO</i>	-0.02*** (0.005)	-0.00 (0.004)	<i>IFRS*DRET</i>	0.01 (0.004)	0.00 (0.003)
<b><i>IFRS * DCFO * CFO</i></b>	-0.18*** (0.009)	0.00 (0.037)	<b><i>IFRS*DRET*RET</i></b>	-0.03*** (0.004)	-0.02*** (0.003)
Constant	0.01*** (0.002)	0.02*** (0.001)	Constant	0.01*** (0.003)	0.02*** (0.002)
# of Obs.	6,025	5,875	# of Obs.	5,189	5,396
Adj. R <sup>2</sup>	0.815	0.778	Adj. R <sup>2</sup>	0.082	0.043

**Panel C: Four subgroups based on their ex-ante information asymmetry**

VARIABLES	(1)	(2)	(3)	(4)
	1 <sup>st</sup> quartile	2 <sup>nd</sup> quartile	3 <sup>rd</sup> quartile	4 <sup>th</sup> quartile
		Magnitude of Complexity Reduction		

<i>CFO</i>	-0.78*** (0.014)	-0.85*** (0.011)	-0.89*** (0.011)	-0.84*** (0.013)
<i>DCFO</i>	-0.00 (0.011)	0.04*** (0.008)	-0.00 (0.006)	0.00 (0.006)
<b><i>DCFO * CFO</i></b>	<b>0.12*** (0.015)</b>	<b>0.30*** (0.021)</b>	<b>0.10** (0.045)</b>	<b>0.06** (0.025)</b>
<i>IFRS * CFO</i>	0.00*** (0.000)	0.00*** (0.000)	0.01 (0.018)	-0.01 (0.019)
<i>IFRS * DCFO</i>	-0.05*** (0.012)	-0.05*** (0.009)	-0.01 (0.008)	-0.01 (0.007)
<b><i>IFRS * DCFO * CFO</i></b>	<b>-0.12*** (0.015)</b>	<b>-0.31*** (0.021)</b>	<b>-0.03 (0.057)</b>	<b>-0.03 (0.045)</b>
Constant	0.00 (0.005)	0.02*** (0.003)	0.03*** (0.002)	0.03*** (0.002)
# of Obs.	1,507	1,510	1,499	1,502
Adj. R <sup>2</sup>	0.758	0.853	0.908	0.886

Notes: Panel A and B report results of the effects of ex-ante information asymmetry that is measured by MB and cash flow volatility, respectively. Columns 1 and 2 of Panel A and B respectively report results the effects of IFRS convergence for firms with high and low information asymmetry based on accrual-based measure of firms' conservatism. Similarly, Columns 3 and 4 of Panel A and B report results based on Basu's measure of firms' conservatism. Columns 1 to 4 in Panel C present the results for four degrees of complexity groups in the periods before and after 2006 and complexity is measured by MB ratio. The baseline regression model established by Ball and Shivakumar (2005) is used to evaluate conditional conservatism for the companies whose share return information is not available or reliable. *ACC* stands for the accruals of company *i* in year *t*, and is defined as (earnings before extraordinary items–operating cash flow) /average total assets. *CFO* stands for the cash flow from operation, which is defined as [earnings before extraordinary items + depreciation – Δ(working capital)] /average total assets. Δ(working capital) is measured as Δ(current assets) –Δ(current liability) +Δ(current portion of long-term liability) –Δ(cash). *DCFO* is a dummy variable, which is equal to one if *CFO* <

0 and equal to 0 if otherwise. The supplementary regression model is a classical approach developed by Basu (1997) assuming firm's stock return denotes its true economic performance. *RET* represents the firm's true economic performance, which is calculated as the firm's accumulative stock return adjusted by market return in the corresponding period. The stock return is estimated considering reinvestment of cash dividends. *DRET* is a dummy variable, which is equal to one if *RET* < 0 and equal to 0 if otherwise. The dependent variable is *EP*, which is measured as earning per share divided by share price in the beginning of the period. *IFRS* is a dummy variable, which is equal to one if Chinese-listed firms adopt IFRS-based new standards and equal to 0 if otherwise. The standard errors are shown in the parentheses. \*, \*\*, \*\*\* represent that statistical results are significant at 10%, 5% and 1%, respectively.

Panel A and B of Table 7.3 reveal that conditional conservatism of the highly complex business model group (Column 1 and 3) before IFRS convergence in 2006 is significantly higher than the conditional conservatism of the lowly complex business model group (Column 2 and 4) under both the accrual-based measure and Basu's measure. This is due to the quality and comparability of the accounting information under the old accounting standards being relatively low, compared to the new standards. This increases the ex-ante information asymmetry, making the demand of the highly complex business model group for conditional conservatism greater than the lowly complex business model group.

However, the conditional conservatism of the highly complex business model group after 2006 declines significantly, and this reduction is much greater than that of the lowly complex business model group. Consequently, the conditional conservatism of the highly complex business model group after 2006 is close to the lowly complex business model group. After controlling the effect of other factors, year and industry, the results (untabulated) remain qualitatively the same. As discussed in the hypothetical development, this is mainly because China's new standards improve accounting quality and comparability, which reduces the ex-ante information asymmetry. Therefore, the advantages of new IFRS-based standards in China are more beneficial to enterprises in the highly complex business model group. As a result, the decline of conditional conservatism in the high business model complexity group is much more than in the lowly complex business model group after 2006. This result supports the second hypothesis of this thesis: *The implementation of new Chinese standards has a greater negative impact on companies with more complex business models in terms of conditionally conservative accounting than companies with less complex business models.*

It is worth noting that when firms were partitioned into four subgroups based on their ex-ante information asymmetry (Panel C), it can be found that the relationships between conservatism and information asymmetry may not be simple linear, and the influence of standards changes for firms with different degrees of information asymmetry might not be a simple linear relationship either. However, the reduction of the highly complex business group in the level of conditionally conservative accounting in the post-IFRS-adoption period, overall, is more

than that of the lowly complex business group.

## 7.4 Moderating effects of state ownership of firms

In order to examine the impacts of state ownership of companies, the entire sample is separated into two groups depending on the ultimate ownership of companies. The SOE group consists of companies controlled by government departments and governmental agents. In this section, based on the state ownership of Chinese public enterprise, this thesis partitioned firms into two subgroups, the non-SOE and the SOE, and focuses on comparing the coefficient on  $IFRS*DCFO*CFO$  between them.

**Table 7.4: The state ownership's moderating effects**

**Panel A: The results without controlling other factors**

VARIABLES	(1)	(2)	VARIABLES	(3)	(4)
	Accrual-based Measure			Basu's Measure	
	SOEs	Non-SOEs		SOEs	Non-SOEs
<i>CFO</i>	-0.85*** (0.007)	-0.77*** (0.008)	<i>RET</i>	0.00 (0.001)	0.00 (0.002)
<i>DCFO</i>	-0.00 (0.003)	0.02*** (0.005)	<i>DRET</i>	-0.00** (0.002)	-0.01*** (0.003)
<b><i>DCFO * CFO</i></b>	<b>0.16***</b> (0.009)	<b>0.19***</b> (0.010)	<b><i>DRET*RET</i></b>	<b>0.04***</b> (0.003)	<b>0.03***</b> (0.004)
<i>IFRS * CFO</i>	0.05*** (0.010)	0.00*** (0.000)	<i>IFRS*RET</i>	0.02*** (0.002)	0.03*** (0.002)
<i>IFRS * DCFO</i>	-0.01*** (0.004)	-0.03*** (0.005)	<i>IFRS*DRET</i>	0.01*** (0.002)	0.01*** (0.002)
<b><i>IFRS * DCFO * CFO</i></b>	<b>-0.18***</b> (0.015)	<b>-0.19***</b> (0.010)	<b><i>IFRS*DRET*RET</i></b>	<b>-0.02***</b> (0.003)	<b>-0.03***</b> (0.004)
Constant	0.02*** (0.001)	0.01*** (0.002)	Constant	0.02*** (0.002)	0.02*** (0.002)
# of Obs.	6,899	5,010	# of Obs.	6,351	4,240
Adj. R <sup>2</sup>	0.859	0.758	Adj. R <sup>2</sup>	0.058	0.077

**Panel B: The results with controlling other factors**

Accrual-based Measure			Basu's Measure		
	SOEs	Non-SOEs		SOEs	Non-SOEs
VARIABLES	(1)	(2)	VARIABLES	(3)	(4)

<i>CFO</i>	-0.68*** (0.083)	-0.56*** (0.132)	<i>RET</i>	-0.03 (0.023)	0.05 (0.034)
<i>DCFO</i>	-0.05 (0.046)	-0.01 (0.071)	<i>DRET</i>	-0.06* (0.039)	0.04 (0.065)
<b><i>DCFO * CFO</i></b>	0.13*** (0.010)	0.16*** (0.008)	<b><i>DRET*RET</i></b>	0.012** (0.060)	0.018** (0.078)
<i>IFRS</i>	-0.00* (0.003)	0.01** (0.004)	<i>IFRS</i>	-0.00 (0.003)	0.00 (0.004)
<i>IFRS * CFO</i>	0.010 (0.014)	-0.034** (0.016)	<i>IFRS*RET</i>	0.02*** (0.002)	0.02*** (0.002)
<i>IFRS * DCFO</i>	-0.007 (0.005)	-0.022*** (0.006)	<i>IFRS*DRET</i>	0.00 (0.003)	0.00 (0.004)
<b><i>IFRS*DCFO*CFO</i></b>	<b>-0.025</b> (0.019)	<b>-0.13***</b> (0.018)	<b><i>IFRS*DRET*RET</i></b>	<b>-0.016***</b> (0.003)	<b>-0.020***</b> (0.004)
<i>SIZE</i>	0.01*** (0.001)	0.01*** (0.002)	<i>SIZE</i>	0.01*** (0.001)	0.01*** (0.002)
<i>SIZE*CFO</i>	-0.01*** (0.004)	-0.02*** (0.006)	<i>SIZE*RET</i>	0.00 (0.001)	-0.00 (0.002)
<i>SIZE*DCFO</i>	-0.00 (0.002)	0.00 (0.003)	<i>SIZE*DRET</i>	0.00 (0.002)	-0.00 (0.003)
<i>SIZE*DCFO *CFO</i>	0.01*** (0.001)	0.01*** (0.001)	<i>SIZE*DRET*RET</i>	-0.00* (0.003)	-0.01** (0.004)
<i>MB</i>	0.00*** (0.001)	0.00** (0.001)	<i>MB</i>	0.00** (0.001)	0.00*** (0.001)
<i>MB*CFO</i>	0.03*** (0.002)	0.04*** (0.002)	<i>MB*RET</i>	0.00 (0.00)	-0.00*** (0.00)
<i>MB*DCFO</i>	0.01*** (0.001)	-0.00*** (0.001)	<i>MB*DRET</i>	0.00 (0.001)	-0.00 (0.001)
<i>MB*DCFO *CFO</i>	0.01*** (0.004)	-0.04*** (0.002)	<i>MB*DRET*RET</i>	0.00* (0.001)	0.00 (0.001)
<i>LEV</i>	-0.12*** (0.006)	-0.01*** (0.003)	<i>LEV</i>	-0.006* (0.003)	-0.03*** (0.006)
<i>LEV*CFO</i>	0.20*** (0.013)	-0.16*** (0.011)	<i>LEV*RET</i>	-0.00 (0.003)	0.01** (0.005)
<i>LEV*DCFO</i>	0.10*** (0.006)	-0.03*** (0.005)	<i>LEV*DRET</i>	-0.01 (0.003)	0.01 (0.007)
<i>LEV*DCFO *CFO</i>	-0.27*** (0.014)	0.11*** (0.012)	<i>LEV*DRET*RET</i>	-0.01 (0.004)	-0.01** (0.006)
<i>Constant</i>	-0.23*** (0.024)	-0.30*** (0.041)	<i>Constant</i>	-0.17*** (0.031)	-0.28*** (0.053)
Observations	6,799	4,860	Observations	6,267	4,144
R-squared	0.888	0.861	R-squared	0.136	0.201

Notes: Notes: Panel A and B report results of the effects of state ownership of firms without and with controlling other factors including company size (SIZE), market value to book value ratio (MB) and financial leverage (LEV), respectively. Column 1 and 3 present the results for the state-owned firms group and Column 2 and 4 present the non-state-owned firms group in the periods before and after the year 2006. Column 1 and 2 stands for the impacts of IFRS-based standards on the level of conditional conservatism based on Accrual-based measure. The baseline regression model established by Ball and Shivakumar (2005) is used to evaluate conditional conservatism for the companies whose share return information is not available or reliable. *ACC* stands for the accruals of company *i* in year *t*, and is defined as (earnings before extraordinary items–operating cash flow) /average total assets. *CFO* stands for the cash flow from operation, which is defined as [earnings before extraordinary items + depreciation – Δ(working capital)] /average total assets. Δ(working capital) is measured as Δ(current assets) –Δ(current liability) +Δ(current portion of long-term liability) –Δ(cash). *DCFO* is a dummy variable, which is equal to one if  $CFO < 0$  and equal to 0 if otherwise. Column 3 and 4 stands for the impacts of IFRS-based standards on the degree of conditional conservatism measured by Basu’s model. The supplementary regression model is a classical approach developed by Basu (1997) assuming firm’s stock return denotes its true economic performance. *RET* represents firm’s true economic performance, which is calculated as firm’s accumulative stock return adjusted by market return in the corresponding period. The stock return is estimated considering reinvestment of cash dividends. *DRET* is a dummy variable, which is equal to one if  $RET < 0$  and equal to 0 if otherwise. The dependent variable is *EP*, which is measured as earning per share divided by stock price in the beginning of the period. *IFRS* is a dummy variable, which is equal to one if Chinese-listed firms adopt IFRS-based new standards and equal to 0 if otherwise. The standard errors are shown in the parentheses. \*, \*\*, \*\*\* represent that statistical results are significant at 10%, 5% and 1%, respectively.

Column 1 and 2 illustrate the influences of IFRS-adoption on the level of conditionally conservative accounting for SOE and non-SOE groups. Same as the previous studies by Chen et al in 2010, the empirical evidence is significantly positive, based on the Accrual-based measurement document that the conditional conservatism in SOEs group evaluated by the coefficient on  $DCFO * CFO$ . However, it was lower than that in the non-SOE groups, indicating that non-SOE enterprises were inclined to provide financial statements in a conditionally conservative manner before IFRS convergence.

Differing slightly from the result of Accrual-based measurement, the empirical results based on Basu’s conditional conservatism measure illustrate that the conditional conservatism of SOEs is higher than the non-SOEs before 2006. The disparity between findings of Accrual-based measurement and Basu’s measurement is due to these results where other

factors aren't controlled. The result of Basu's measurement after controlling the other factors (as shown in Panel B) is consistent with that of Accrual-based measurement as shown in the table. Both the findings illustrate that conditional conservatism of SOEs is lower than non-SOEs before 2006 and are consistent with the findings of Chen's research (2010).

The parameter of  $IFRS * DCFO * CFO$  and  $IFRS * DRET * RET$  present the impacts of China adopting IFRS-based standards on conditionally conservative accounting for SOEs and non-SOEs. In addition, the estimated parameters of  $DCFO * CFO$  and  $DRET * RET$  present the conditional conservatism of SOEs and non-SOEs in the pre-2006 period. Therefore, it can be found from the result of Table 7.4 that the conditional conservatism of the non-SOE group (the coefficients on  $IFRS * DCFO * CFO$  and  $IFRS * DRET * RET$  in Column 2 and 4 of Panel A) declines by 0.19 (Accrual-based measurement) and 0.03 (Basu's measurement) in the post-2006 period. However, the conditional conservatism of the SOE group just decreases by 0.18 (Accrual-based measurement) and 0.02 (Basu's measurement) in the post-2006 period. This result demonstrates that after IFRS convergence in 2006, the decrease of conditional conservatism of the non-SOE group is higher than that of the SOE group, and the conditional conservatism of the SOE group is lower than that of the non-SOE group either before or after IFRS convergence. Therefore, the differences with regard to firms' state ownership affect conditional conservatism, and non-SOE firms played a significant role in the reduction of conditional conservatism after IFRS convergence.

As discussed in the hypothetical development, state-owned enterprises enjoy potential government insurance (Xu et al., 2005), and SOEs need to consider more diverse social and political factors than non-SOEs instead of pure financial and business performance (Chen et al, 2010). Therefore, it can be found from the results that conditional conservatism of SOEs is lower than the non-SOEs before 2006, which is consistent with the findings of Chen's research (2010). As China's capital market improved, there was more intense market competition and state-owned enterprise reform (including management systems and regulatory systems of various state-owned enterprises). The difference between SOEs and non-SOEs, however, is gradually decreasing, and their demand on conservatism is achieving a



closer level.

Thus, Table 7.4 demonstrates these results: SOE groups under standards before 2006 have a lower level of conditional conservatism; but, after IFRS convergence in 2006, the decrease of conditional conservatism of the non-SOE group is higher than that of the SOE group; and the difference of conditional conservatism between the non-SOE group and the SOE group has reduced. Thus, the findings are consistent with third hypothesis: *The implementation of new Chinese standards has a greater negative impact on non-state-owned enterprises in terms of conditionally conservative accounting than state-owned enterprises.*

## **7.5 Moderating effects of financial constraints**

It would also be interesting to explore the reason behind a firms' choice to reduce their conditional conservatism after IFRS convergence. Specifically, this thesis investigated whether the financial constraints, which lead to debtholder's conservatism demands (Chen et al., 2010), would moderate the impacts of IFRS convergence. Moreover, the core of this problem (this has been discussed in section 4.1 of Hypotheses Development) is actually that IFRS adoption could affect principals' demands (debt holders' demands) for conservative accounting by shifting the monitoring costs of principals downwards.

Existing research on monitoring costs of debt face a problem similar to information asymmetry, i.e. it is difficult to quantify. Therefore, it is also a complex problem. However, the amount of research related to monitoring costs of debt is far less than the research on information asymmetry. The monitoring costs of debt are rarely discussed and studied separately, which is often included in the agency cost to be studied in previous studies. In agency theory, agency costs include monitoring costs, bonding costs and residual loss, and monitoring costs are a major part of agency costs. However, the amount of quantitative research on debt agency cost is also far less than the research on information asymmetry. Therefore, there is no accurate way to measure the monitoring costs of debt. In some studies, leverage and interest are directly adopted as indicators of debt agency costs. Therefore,

borrowing from these studies, this thesis will directly represent leverage and interest as the monitoring costs of debt.

Hence, this thesis partitioned firms into two subgroups based on their financial constraints, using financial leverage and interest as the proxies for monitoring costs of each firm's debt. Table 8 presents the results of the moderating effects of financial constraints.

**Table 7.5: The moderating effects of financial constraints**

**Panel A: The monitoring costs of debt is measured by financial leverage**

VARIABLES	Accrual-based Measure		VARIABLES	Basu's Measure	
	High Leverage	Low Leverage		High Complexity	Low Complexity
	(1)	(2)		(3)	(4)
<i>CFO</i>	-0.79*** (0.006)	-0.86*** (0.008)	<i>RET</i>	0.00 (0.002)	-0.00 (0.001)
<i>DCFO</i>	0.01 (0.005)	0.00 (0.003)	<i>DRET</i>	-0.01*** (0.003)	-0.00 (0.002)
<b><i>DCFO * CFO</i></b>	<b>0.18*** (0.008)</b>	<b>0.08*** (0.017)</b>	<b><i>DRET*RET</i></b>	<b>0.05*** (0.004)</b>	<b>0.02*** (0.003)</b>
<i>IFRS * CFO</i>	0.00*** (0.000)	0.08*** (0.010)	<i>IFRS*RET</i>	0.02*** (0.002)	0.02*** (0.001)
<i>IFRS * DCFO</i>	-0.02*** (0.005)	-0.00 (0.004)	<i>IFRS*DRET</i>	0.02*** (0.002)	0.01*** (0.001)
<b><i>IFRS * DCFO * CFO</i></b>	<b>-0.18*** (0.008)</b>	<b>-0.14*** (0.022)</b>	<b><i>IFRS*DRET*RET</i></b>	<b>-0.03*** (0.004)</b>	<b>-0.03*** (0.002)</b>
Constant	-0.00* (0.002)	0.03*** (0.001)	Constant	0.02*** (0.002)	0.02*** (0.001)
# of Obs.	5,955	5,954	# of Obs.	5,437	5,154
Adj. R <sup>2</sup>	0.791	0.864	Adj. R <sup>2</sup>	0.065	0.108

**Panel B: The monitoring costs of debt is measured by loan interest**

VARIABLES	Accrual-based Measure		VARIABLES	Basu's Measure	
	High Interest	Low Interest		High Interest	Low Interest
	(1)	(2)		(3)	(4)
<i>CFO</i>	-0.91*** (0.0110)	-0.88*** (0.0153)	<i>RET</i>	-0.00 (0.002)	0.00 (0.002)
<i>DCFO</i>	0.01 (0.007)	-0.02** (0.008)	<i>DRET</i>	-0.00 (0.005)	-0.01 (0.007)
<i>DCFO * CFO</i>	<b>0.11***</b> <b>(0.024)</b>	<b>0.10***</b> <b>(0.011)</b>	<i>DRET*RET</i>	<b>0.03***</b> <b>(0.006)</b>	<b>0.03***</b> <b>(0.006)</b>
<i>IFRS * CFO</i>	0.02 (0.02)	0.04 (0.025)	<i>IFRS*RET</i>	0.03*** (0.004)	0.03*** (0.003)
<i>IFRS * DCFO</i>	-0.00 (0.007)	0.04*** (0.010)	<i>IFRS*DRET</i>	0.01** (0.005)	0.01 (0.007)
<i>IFRS * DCFO * CFO</i>	<b>-0.08**</b> <b>(0.036)</b>	<b>0.09*</b> <b>(0.049)</b>	<i>IFRS*DRET*RET</i>	<b>-0.04***</b> <b>(0.007)</b>	<b>-0.03***</b> <b>(0.007)</b>
Constant	0.03*** (0.002)	0.02*** (0.003)	Constant	0.02*** (0.004)	0.01* (0.006)
# of Obs.	1,300	1,287	# of Obs.	1,180	1,138
Adj. R <sup>2</sup>	0.932	0.893	Adj. R <sup>2</sup>	0.081	0.125

Notes: Notes: Panel A and B report results of the effects of monitoring costs of debt that is measured by leverage and interest, respectively. Columns 1 and 2 of Panel A and B respectively report results on the effects of IFRS convergence for firms with high and low monitoring costs of debt based on the accrual-based measure of firms' conservatism. Similarly, Columns 3 and 4 of Panel A and B report results based on Basu measure of firms' conservatism. Column 1 and 2 present the results for the high-leverage (interest) group and the low-leverage (interest) group in the periods before and after the year 2006. The leverage is calculated as the ratio of the firm's total liabilities over total assets. The interest is equal to the loan interest of firms. The baseline regression model established by Ball and Shivakumar (2005) is

used to evaluate conditional conservatism for the companies whose share return information is not available or reliable. *ACC* stands for the accruals of company *i* in year *t*, and is defined as (earnings before extraordinary items—operating cash flow) /average total assets. *CFO* stands for the cash flow from operation, which is defined as [earnings before extraordinary items + depreciation –  $\Delta(\text{working capital})$ ] /average total assets.  $\Delta(\text{working capital})$  is measured as  $\Delta(\text{current assets}) - \Delta(\text{current liability}) + \Delta(\text{current portion of long-term liability}) - \Delta(\text{cash})$ . *DCFO* is a dummy variable, which is equal to one if  $\text{CFO} < 0$  and 0 if otherwise. The supplementary regression model is a classical approach developed by Basu (1997) assuming a firm's stock return denotes its true economic performance. *RET* represents a firm's true economic performance, which is calculated as the firm's accumulative stock return adjusted by market return in corresponding period. The stock return is estimated considering reinvestment of cash dividends. *DRET* is a dummy variable, which is equal to one if  $\text{RET} < 0$  and equal to 0 if otherwise. The dependent variable is *EP*, which is measured as earning per share divided by stock price in the beginning of the period. *IFRS* is a dummy variable, which is equal to one if Chinese-listed firms adopt IFRS-based new standards and equal to 0 if otherwise. The standard errors are shown in the parentheses. All continuous variables are winsorized at 1%. \*, \*\*, \*\*\* represent that statistical results are significant at 10%, 5% and 1%, respectively.

Panel A of Table 7.5 indicates that the conditional conservatism of the high leverage group is superior to that of the low leverage group, both before and after 2006. This is consistent with previous studies like that of Khan and Watts (2007). These previous studies have proved that there is a significant positive correlation between accounting conservatism and leverage, indicating that this result is reasonable and reliable. This is because the highly leveraged firm is driven more by the demand of the debt holder for conservatism, and the lowly leveraged firm is driven more by the shareholder demand for conservatism, while the debt market is more demanding for conservatism than the equity market.

Columns 1 and 2 in Panel A of Table 7.5 present the conditional conservatism of the high-leverage group and the low-leverage group in the pre- and post-2006 periods, respectively. From this, it can be found that the conditional conservatism of the highly leveraged firms group dropped significantly from 0.18 in the pre-2006 period to 0.00 (0.18-0.18) in the post-2006 period, while the conditional conservatism of the low leverage companies group decreased from 0.08 in the pre-2006 period to -0.06 (0.08-0.14) in the post-2006 period. From the two sets of data, it can be concluded that the new standards significantly reduce the conditional conservatism of both the high and low leverage groups. In addition, a comparison of the estimated parameters of  $IFRS * DCFO * CFO$  in the two groups reveals that the low leverage group is impacted less by the change in standards than the high leverage group. Results of the effects of monitoring costs of debt that is measured by interest provide the same conclusion. In addition, results based on Basu's measure are consistent with results based on accrual-based measure. As discussed in the hypothetical development, the conservatism demands of the firms with more severe financial constraints (high leverage and interest) are primarily driven by debt holders, especially commercial banks. Therefore, this phenomenon is mainly due to China's new standards for improving the quality of the accounting information and reducing the monitoring costs of debt, which declines the demand of debt holders (lenders) for conservatism of companies (borrowers). The response of the highly leveraged group to the reduced demand of debt holders for conservatism is more obvious than the lowly leveraged group. After controlling the effect of other factors, year and industry, the results remain qualitatively the same (untabulated). Therefore, IFRS convergence

makes the degree of reduction of conditional conservatism in the high leverage group higher than that in the low leverage group. This result is consistent with the fourth hypothesis of this thesis: *The implementation of new Chinese standards has a greater negative impact on firms with more financial constraints in terms of conditionally conservative accounting than firms with less financial constraints.*

## **7.6 Moderating effects of state ownership of banks**

In order to further study the impact of the state ownership of banks (debt holders) on the conditional conservatism changes, this thesis employs the bank's loan database and partitions firms into two subgroups based on the state ownership of banks. One is a state-owned bank group, where the companies borrow from state-owned banks (SBs); the other is non-state-owned banks group, where the companies borrow from non-state-owned banks (NSBs) (including foreign-owned and local private banks). Table 7.6 presents the results of the moderating effects of state ownership of banks (debt holders).

**Table 7.6: Context effects on bank's state ownership**

**Panel A: The results without controlling other factors**

VARIABLES	Accrual-based Measure		VARIABLES	Basu's Measure	
	State-owned Banks	Non-State-owned Banks		State-owned Banks	Non-State-owned Banks
	(1)	(2)		(3)	(4)
<i>CFO</i>	-0.92*** (0.009)	-0.90*** (0.008)	<i>RET</i>	-0.01*** (0.002)	-0.00** (0.001)
<i>DCFO</i>	0.01** (0.005)	0.02*** (0.005)	<i>DRET</i>	-0.01** (0.003)	-0.01*** (0.003)
<b><i>DCFO * CFO</i></b>	<b>0.16*** (0.012)</b>	<b>0.19*** (0.012)</b>	<b><i>DRET*RET</i></b>	<b>0.04*** (0.003)</b>	<b>0.03*** (0.002)</b>
<i>IFRS * CFO</i>	0.01 (0.019)	0.00 (0.014)	<i>IFRS*RET</i>	0.03*** (0.002)	0.02*** (0.001)
<i>IFRS * DCFO</i>	-0.01** (0.006)	-0.02*** (0.006)	<i>IFRS*DRET</i>	0.01*** (0.003)	0.01*** (0.003)
<b><i>IFRS * DCFO * CFO</i></b>	<b>-0.12*** (0.027)</b>	<b>-0.16*** (0.021)</b>	<b><i>IFRS*DRET*RET</i></b>	<b>-0.04*** (0.005)</b>	<b>-0.02*** (0.003)</b>
Constant	0.02*** (0.003)	0.02*** (0.003)	Constant	0.02*** (0.002)	0.02*** (0.003)
# of Obs.	3,202	5,704	# of Obs.	2,862	5,267
Adj. R <sup>2</sup>	0.929	0.931	Adj. R <sup>2</sup>	0.098	0.075

**Panel B: The results with controlling other factors**



VARIABLES	Accrual-based Measure		VARIABLES	Basu's Measure	
	State-owned Banks	Non-State-owned Banks		State-owned Banks	Non-State-owned Banks
	(1)	(2)		(3)	(4)
<i>CFO</i>	-1.42*** (0.115)	-0.93*** (0.078)	<i>RET</i>	0.03 (0.041)	-0.05* (0.028)
<i>DCFO</i>	-0.32*** (0.063)	-0.21*** (0.044)	<i>DRET</i>	-0.13** (0.0503)	-0.07* (0.0374)
<i>DCFO * CFO</i>	<b>0.12*** (0.017)</b>	<b>0.13*** (0.015)</b>	<i>DRET*RET</i>	<b>0.05 (0.082)</b>	<b>0.17*** (0.056)</b>
<i>IFRS</i>	-0.00 (0.003)	0.01*** (0.003)	<i>IFRS</i>	0.00 (0.003)	-0.01** (0.003)
<i>IFRS * CFO</i>	-0.03* (0.018)	-0.13*** (0.014)	<i>IFRS*RET</i>	0.03*** (0.002)	0.02*** (0.001)
<i>IFRS * DCFO</i>	-0.03*** (0.00)	-0.04*** (0.005)	<i>IFRS*DRET</i>	-0.00 (0.003)	0.01** (0.003)
<i>IFRS * DCFO * CFO</i>	<b>-0.12*** (0.024)</b>	<b>0.00 (0.020)</b>	<i>IFRS*DRET*RET</i>	<b>-0.04*** (0.005)</b>	<b>-0.02*** (0.003)</b>
<i>SIZE</i>	0.01*** (0.002)	0.01*** (0.001)	<i>SIZE</i>	0.002 (0.002)	0.003** (0.001)
<i>SIZE*CFO</i>	0.02*** (0.005)	0.00 (0.003)	<i>SIZE*RET</i>	-0.002 (0.002)	0.002 (0.001)
<i>SIZE*DCFO</i>	0.02*** (0.003)	0.01*** (0.002)	<i>SIZE*DRET</i>	0.006** (0.002)	0.004** (0.002)
<i>SIZE*DCFO *CFO</i>	0.00 (0.002)	-0.01*** (0.002)	<i>SIZE*DRET*RET</i>	0.00 (0.004)	-0.001*** (0.003)

<i>MB</i>	0.00 (0.001)	0.01*** (0.001)	<i>MB</i>	-0.00 (0.00140)	0.00*** (0.00129)
<i>MB*CFO</i>	0.05*** (0.004)	0.01*** (0.003)	<i>MB*RET</i>	-0.00 (0.002)	-0.00 (0.001)
<i>MB*DCFO</i>	0.01*** (0.003)	0.01*** (0.002)	<i>MB*DRET</i>	-0.00 (0.002)	-0.01*** (0.002)
<i>MB*DCFO *CFO</i>	-0.01 (0.013)	0.05*** (0.008)	<i>MB*DRET*RET</i>	-0.00 (0.003)	-0.00 (0.002)
<i>LEV</i>	-0.10*** (0.009)	-0.11*** (0.005)	<i>LEV</i>	-0.05*** (0.011)	-0.01 (0.009)
<i>LEV*CFO</i>	-0.01 (0.029)	0.02 (0.020)	<i>LEV*RET</i>	0.00 (0.012)	-0.00 (0.008)
<i>LEV*DCFO</i>	-0.04** (0.017)	0.01 (0.012)	<i>LEV*DRET</i>	-0.00 (0.013)	-0.02** (0.011)
<i>LEV*DCFO *CFO</i>	0.02 (0.066)	0.09** (0.044)	<i>LEV*DRET*RET</i>	0.03 (0.020)	0.05*** (0.014)
<i>Constant</i>	-0.07** (0.033)	-0.18*** (0.023)	<i>Constant</i>	0.00 (0.039)	-0.04 (0.030)
Observations	3,184	5,684	Observations	2,849	5,246
R-squared	0.947	0.949	R-squared	0.181	0.191

Notes: Panel A and B report results of the effects of state ownership of banks (debt holders) without and with controlling other factors including company size (SIZE), market value to book value ratio (MB) and financial leverage (LEV), respectively. Column 1 and 3 present the results for the state-owned banks group and Column 2 and 4 present the non-state-owned banks group in the periods before and after the year 2006. State-owned banks mainly include the big four banks. Non-state-owned banks mainly include foreign-owned and local private banks. Column 1 and 2 stands for the impacts of IFRS-based standards on the level of conditional conservatism based on the Accrual-based measure. The baseline regression model established by Ball and Shivakumar (2005) is used to evaluate conditional conservatism for the

companies whose share return information is not available or reliable. *ACC* stands for the accruals of company *i* in year *t*, and is defined as (earnings before extraordinary items–operating cash flow) /average total assets. *CFO* stands for the operating cash flow, which is defined as [earnings before extraordinary items + depreciation –  $\Delta(\text{working capital})$ ] /average total assets.  $\Delta(\text{working capital})$  is measured as  $\Delta(\text{current assets}) - \Delta(\text{current liability}) + \Delta(\text{current portion of long-term liability}) - \Delta(\text{cash})$ . *DCFO* is a dummy variable, which is equal to one if  $\text{CFO} < 0$  and equal to 0 if otherwise. Column 3 and 4 stands for the impacts of IFRS-based standards on the level of conditional conservatism based on Basu’s measure. The supplementary regression model is a classical approach developed by Basu (1997), assuming firm’s stock return denotes its true economic performance. *RET* represents firm’s true economic performance, which is calculated as firm’s accumulative stock return adjusted by market return in the corresponding period. The stock return is estimated considering reinvestment of cash dividends. *DRET* is a dummy variable, which is equal to one if  $\text{RET} < 0$  and equal to 0 if otherwise. The dependent variable is *EP*, which is measured as earning per share divided by stock price in the beginning of the period. *IFRS* is a dummy variable, which is equal to one if Chinese-listed firms adopt IFRS-based new standards and equal to 0 if otherwise. The standard errors are shown in the parentheses. \*, \*\*, \*\*\* represent that statistical results are significant at 10%, 5% and 1%, respectively.

Column 1 and 2 of both Panel A and B illustrate the effect of China adopting IFRS-based standards on conditional conservatism for the companies that borrow from SBs and NSBs. The estimated parameter of  $DCFO * CFO$  presents the conditional conservatism of SBs and NSBs group in the pre-2006 period. Similar to previous studies (Chen et al., 2010), the empirical evidence based on the Accrual-based measurement document that the conditional conservatism in the state-owned banks group evaluated by the parameter on  $DCFO * CFO$  is significantly positive. However, it is lower than that in non-state-owned banks groups, indicating that SBs compared with non-SBs are less effective at and concerned with monitoring the default risk of borrowers before IFRS convergence. Moreover, the results of Basu's model when controlling other factors also support Chen's (2010) point of view.

The estimated parameters of  $IFRS * DCFO * CFO$  and  $IFRS * DRET * RET$  stands for the impacts of China adopting IFRS-based standards on conditional conservatism for SBs and NSBs. Therefore, it can be seen from the results in Table 7.6 that the conditional conservatism of the SBs group (the coefficients on  $IFRS * DCFO * CFO$  in Column 1 of Panel A and B) declines by 0.12 (without and with controlling other factors) in the post-2006 period. However, the conditional conservatism of the NSBs group just decreases by 0.16 (without controlling other factors) in the post-2006 period. The result of accrual-based measurement illustrates that the decline of the SBs group is less than that of the NSBs group after IFRS convergence, given that the other factors are not controlled. However, the result with controlling other factors is the opposite, i.e. the decline of the state-owned bank group is greater than that of the non-state owned bank group. Unlike results of the accrual-based method, both results of Basu-based measurement remain consistent, i.e. the decline in the state-owned bank group is always greater than that of the non-state-owned group before and after controlling other variables. Therefore, it can be considered that the decline of the state-owned bank group in conservatism is higher than that of the non-state bank group.

As discussed in the hypothetical development, state-owned banks are much more likely to be affected by the “soft” information and non-financial factors (e.g. national policies, local government attitudes, etc.) than non-state-owned banks. After the economic downturn in 2007-2008, the state-owned banks stepped up their lending efforts (four trillion investment plans) according to the national policies and priorities. Therefore, it can be interpreted that state-owned banks relaxed their demand for conservatism and so the conditional conservatism of the state-owned banks group declined rapidly. State-owned banks are more affected by policies and have lower profitability requirements. Unlike state-owned banks, non-state-owned banks may implement the loan review more strictly and increased demands for conservatism after the economic downturn in 2008 in order to reduce the risk, which offset the impact of IFRS adoption on reducing conditional conservatism. Therefore, after the IFRS convergence in 2006, the reduction in the conditional conservatism of the state-owned banks group is higher than that in the non-state-owned banks group. This result is consistent with the fifth

hypothesis of this thesis: *The implementation of new Chinese standards has a greater negative impact on firms who borrow from state-owned banks in terms of conditionally conservative accounting than firms who borrow from non-state-owned banks.*

# Chapter Eight: Main empirical findings for unconditional conservatism

## 8.1 Descriptive evidence for impacts of IFRS convergence on unconditional conservatism

Prior to formal regressive analyses, this thesis first uses descriptive evidence to test the impacts of IFRS convergence. This thesis employs the regression equation (5) to measure the unconditional conservatism of the whole market in two periods and reports the results in Table 8.1.

*Table 8.1.1: Unconditional conservatism over Years*

**Panel A: Full sample based on the book-to-market method**

	(1) 2002-2005		(2) 2007-2010
$R$	-0.00143 (-0.77)	$R$	0.00168 (1.59)
$R_{t-1}$	-0.00268 (-0.99)	$R_{t-1}$	0.00331** (2.79)
$R_{t-2}$	-0.00653 (-1.74)	$R_{t-2}$	0.00147 (1.43)
$R_{t-3}$	0.00318 (0.91)	$R_{t-3}$	0.00194 (0.78)
$R_{t-4}$	0.00353 (1.06)	$R_{t-4}$	0.00579** (2.75)
$R_{t-5}$	0.00349 (1.10)	$R_{t-5}$	0.00501 (1.89)
$R_{t-6}$	0.000679 (0.20)	$R_{t-6}$	0.00214* (1.98)
2002	0 (.)	2007	-0.316*** (-40.45)
2003	0.0710*** (10.32)	2008	0.0574*** (6.35)
2004	0.182*** (20.54)	2009	-0.257*** (-29.83)
2005	0.331*** (28.98)	2010	-0.220*** (-23.83)
Constant	0.357*** (50.36)	Constant	0.538*** (81.68)

Observations	2,091	Observations	4,685
R-squared (with Fixed Effects)	0.517	R-squared (with Fixed Effects)	0.559

Estimation equation is:

$$BTM_{t,i} = \alpha_t + \alpha_i + \sum_{j=0}^6 \beta_j R_{t-j,i} + \varepsilon_{t,i} \quad (5)$$

Notes: Panel A reports the results observed over years based on the book-to-market method. The baseline regression models are established by Beaver and Ryan (2000), and can be used to measure unconditional accounting conservatism. R represents the firms' economic performance, which is calculated as market returns on equity over the fiscal year adjusted by share distributions.  $R_{t-j,i}$  is the current and lagged annual share returns of firm i in the past six years.  $j = 0, 1, 2, 3, 4, 5, 6$ . BTM is the book value-to-market value ratio of enterprises. \*, \*\*, \*\*\* represent that statistical results are significant at 10%, 5% and 1%, respectively.

**Panel B: Pooled sample quantiles of the bias components based on fixed effects regressions**

	Mean ( $\alpha_i$ )	Mean ( $-\alpha_i$ )	Std. Dev.	10 <sup>th</sup> Per	25 <sup>th</sup> Per	50 <sup>th</sup> Per	75 <sup>th</sup> Per	90 <sup>th</sup> Per	# of Obs.
2002-2005	-0.00108	0.00108	0.257	-0.306	-0.195	-0.047	0.175	0.381	2,091
2007-2010	-0.00140	0.00140	0.179	-0.210	-0.136	-0.025	0.102	0.247	4,685

Notes:  $\alpha_i$  is the fixed effect of specific companies, which is the persistent component of the book-to-market ratio of the company.  $\alpha_i$  represents unconditional conservatism and is inversely proportional to unconditional conservatism. Due to higher unconditional conservatism with a lower value of bias components ( $\alpha_i$ ), the mean value of bias components ( $\alpha_i$ ) is multiplied by -1 for the ease of comparison and observation.

According to the research method described above, this section uses the Fixed Effects Regression Model for the analysis of equation (5). Panel B of Table 8.1.1 reports the descriptive statistics for the bias components. The first line of Panel B reflects the results of the bias ( $\alpha_i$ ) with samples from 2002 to 2005, while the second line reflects the results of the regression with samples from 2007 to 2010. As demonstrated in Panel B of Table 8.1.1, the bias ( $\alpha_i$ ) is less than 1 at each percentile, suggesting that the accounting information of China's A-share listed companies is unconditionally conservative from 2002 to 2010. However, since the regression sample of equation (5) excludes firms with consecutive listing records of less than seven years (it comprises of over half of full sample), this sample may depict a survival bias, and the regression results may not represent listed companies overall.

As depicted in Panel B, the bias components ( $-\alpha_i$ ) in the book-to-market ratio of the Chinese-listed companies increased from 0.00108 to 0.00140, suggesting that the accounting information of Chinese-listed companies contains a more persistent bias component. In light of this, one can observe a clear increasing pattern for the level of unconditional conservatism before and after 2006. The results of these simple descriptive statistics are consistent with the sixth hypothesis regarding unconditional conservatism.

**Table 8.1.2: Unconditional conservatism over years for SOEs and non-SOEs**

**Panel A: Pooled sample quantiles of the bias components for the SOEs**

<b>SOEs</b>	Mean ( $\alpha_i$ )	Mean ( $-\alpha_i$ )	Std. Dev.	10 <sup>th</sup> Per	25 <sup>th</sup> Per	50 <sup>th</sup> Per	75 <sup>th</sup> Per	90 <sup>th</sup> Per	# of Obs.
2002-2005	-0.00116	0.00116	0.252	-0.316	-0.207	-0.053	0.183	0.358	2,091
2007-2010	-0.00161	0.00161	0.183	-0.211	-0.135	-0.033	0.098	0.250	4,685

**Panel B: Pooled sample quantiles of the bias components for the non-SOEs**

<b>non-SOEs</b>	Mean ( $\alpha_i$ )	Mean ( $-\alpha_i$ )	Std. Dev.	10 <sup>th</sup> Per	25 <sup>th</sup> Per	50 <sup>th</sup> Per	75 <sup>th</sup> Per	90 <sup>th</sup> Per	# of Obs.
2002-2005	-0.00127	0.00127	0.258	-0.300	-0.202	-0.030	0.154	0.407	731
2007-2010	-0.00051	0.00051	0.162	-0.185	-0.126	-0.018	0.105	0.237	1,520

Notes:  $\alpha_i$  is the fixed effect of specific companies, which is the persistent component of the book-to-market ratio of the company.  $\alpha_i$  represents unconditional conservatism and is inversely proportional to unconditional conservatism. Due to higher unconditional conservatism with a lower value of bias components ( $\alpha_i$ ), the mean value of bias components ( $\alpha_i$ ) is multiplied by -1 for the ease of comparison and observation.

Panel A and Panel B of Table 8.1.2 report the bias component of SOEs and non-SOEs separately in the periods before and after IFRS convergence. After a comparison of the mean of the bias ( $-\alpha_i$ ) between SOEs and non-SOEs, it can be found that non-SOEs before 2006 generated more persistently unrecorded goodwill, suggesting that the unconditional conservatism of non-SOEs, on average, is higher than SOEs. However, this situation changed after the adoption of IFRS in 2006. SOEs after 2006 can be seen to generate more persistent bias than non-SOEs, suggesting that after IFRS convergence, the unconditional conservatism of Chinese SOEs increased more than that of non-SOEs. Therefore, the results of the descriptive statistical results can preliminarily prove the sixth and seventh hypothesis of this thesis regarding unconditional conservatism. In the following sections, this thesis will conduct a formal regression analysis to further prove both hypotheses.

**Table 8.1.3: Balanced Sample**

**Panel A: Pooled sample quantiles of the bias components for China's listed companies**

	Mean ( $\alpha_i$ )	Mean ( $-\alpha_i$ )	Std. Dev.	10 <sup>th</sup> Per	25 <sup>th</sup> Per	50 <sup>th</sup> Per	75 <sup>th</sup> Per	90 <sup>th</sup> Per	# of Obs.
2002-2005	-0.00047	0.00047	0.245	-0.286	-0.187	-0.038	0.136	0.377	1,525
2007-2010	-0.00098	0.00098	0.182	-0.204	-0.133	-0.034	0.104	0.266	1,941

**Panel B: Pooled sample quantiles of the bias components for the SOEs**

<b>SOEs</b>	Mean ( $\alpha_i$ )	Mean ( $-\alpha_i$ )	Std. Dev.	10 <sup>th</sup> Per	25 <sup>th</sup> Per	50 <sup>th</sup> Per	75 <sup>th</sup> Per	90 <sup>th</sup> Per	# of Obs.
2002-2005	0.00022	-0.00022	0.237	-0.289	-0.189	-0.041	0.142	0.358	975
2007-2010	-0.00137	0.00137	0.188	-0.212	-0.135	-0.035	0.103	0.281	1,301

**Panel C: Pooled sample quantiles of the bias components for the non-SOEs**



<b>non-SOEs</b>	Mean ( $\alpha_i$ )	Mean ( $-\alpha_i$ )	Std. Dev.	10 <sup>th</sup> Per	25 <sup>th</sup> Per	50 <sup>th</sup> Per	75 <sup>th</sup> Per	90 <sup>th</sup> Per	# of Obs.
2002-2005	-0.00101	0.00101	0.248	-0.276	-0.204	-0.042	0.098	0.412	550
2007-2010	-0.00035	0.00035	0.157	-0.162	-0.117	-0.030	0.091	0.235	640

Notes:  $\alpha_i$  is the fixed effect of specific companies, which is the persistent component of the book-to-market ratio of the company.  $\alpha_i$  represents unconditional conservatism and is inversely proportional to unconditional conservatism. Due to higher unconditional conservatism with a lower value of bias components ( $\alpha_i$ ), the mean value of bias components ( $\alpha_i$ ) is multiplied by -1 for the ease of comparison and observation.

It is worth noting in Table 8.1.1 and Table 8.1.2 that the number of samples in the pre-2006 period is more than twice the number of samples in the post-2006 period. Based on this observation, it may be said that the systematically unconditional conservatism differences between pre- and post-2006 periods are driven by the intertemporal variances in the composition of listed enterprises in China. The imbalance in the sample is mainly because these firms were listed on China's domestic stock exchanges only after 1996. Considering the possibility that these newly listed firms led to an increase in unconditional conservatism after the year 2006, this thesis repeated the regression of Panel A for a balanced sample consisting solely of those enterprises that went public before the year 1996. The results have been reported in panels A, B, and C of Table 8.1.3. Compared to Panel B of Table 8.1.1 and panels A and B of Table 8.1.2, it can be found that the results of Table 8.1.3 are consistent with those of Panel B of Table 8.1.1 and panels A and B of Table 8.1.2. This indicates that the newly-listed firms did not depict the observed differences.

## 8.2 Regressive evidence for impacts of IFRS convergence on unconditional conservatism

For the purpose of examining the sixth hypothesis, this thesis employed equation (6) following the econometric models discussed earlier. This thesis, which is based on the BTM measurement method, further examined the impacts of IFRS-based standards with regressive evidence. The sample includes Chinese public companies from the year 2002 to 2010. As mentioned above, the coefficients of the IFRS dummy variable can be employed to measure the impact of IFRS-based standards, which is the focus of this thesis. The results for those OLS regressions are listed in Table 8.2.

**Table 8.2: Unconditional conservatism pre- and post-IFRS adoption**

Estimation equation:		
$BTM_{t,i} = \alpha_t + \alpha_i + \beta_1 IFRS + \sum_{j=0}^6 \beta_j R_{t-j,i} + \varepsilon_{t,i} \quad (6)$		
	Full Sample	Balanced sample
<i>IFRS</i>	-0.213*** (-27.73)	-0.174*** (-17.98)
<i>R</i>	0.00352 (1.65)	0.00094 (0.33)

$R_{t-1}$	0.000792 (0.62)	-0.00197 (-1.03)
$R_{t-2}$	-0.00108 (-0.59)	-0.00348 (-1.44)
$R_{t-3}$	0.000696 (0.45)	0.000269 (0.19)
$R_{t-4}$	0.00568 (1.70)	0.00361 (1.01)
$R_{t-5}$	0.00153 (0.50)	-0.000116 (-0.04)
$R_{t-6}$	-0.00303 (-1.20)	-0.00449 (-1.58)
Constant	0.554*** (124.60)	0.496*** (114.63)
Observations	6,776	3,466
R-squared (with Fixed Effects)	0.535	0.473

Notes: Table 8.2 reports the influence of IFRS-adoption on the unconditional conservatism level of firms based on the book-to-market measure.  $R$  represents the firms' economic performance, which is calculated as market returns on equity over the fiscal year adjusted by share distributions.  $R_{t-j,i}$  is the current and lagged annual share returns of firm  $i$  in the past six years.  $j = 0, 1, 2, 3, 4, 5, 6$ . BTM is the book value-to-market value ratio of the firms. *IFRS* is a dummy variable, which is equal to one if Chinese-listed firms adopt IFRS-based new standards and equal to 0 if otherwise.  $t$  statistics are shown in the parentheses. \*, \*\*, \*\*\* represent that statistical results are significant at 10%, 5% and 1%, respectively.

Table 8.2 presents the main results of this section. The foremost conclusion drawn is that the BTM ratio of the listed Chinese firms declined by 0.213 after the adoption of IFRS-convergent standards in the year 2006. As discussed above, the bias component represents an unconditional conservatism and is inversely proportional to unconditional conservatism. The coefficient on IFRS is negative and statistically significant at the 1% level, suggesting that IFRS convergence leads to an increase in the unconditional conservatism. This proves that Chinese-listed companies tend to generate more persistently unrecorded goodwill under new standards. As compared to the pre-IFRS convergence period, firms in the post-IFRS convergence period possess more bias in the BTM ratio and have more persistently unrecorded goodwill.

As mentioned in the hypothesis development, the main impact of new Chinese accounting standards on unconditional conservatism is reflected in the changes in requirements of capitalisation and depreciation. The unconditional conservatism of Chinese-listed enterprises is determined by the impact degree of both such changes. Many scholars (such as Yang, 2014; Geng, 2013; Yang, 2012) found that Chinese companies in the pre-2006 period had a serious problem of idle assets which could not be depreciated under the former standards. Moreover, Shao and Sun (2014) discovered that the most listed high-tech companies still tend to expense all or most of their R&D costs after 2006. Therefore, the impact scope of changes in capitalisation is far less than that in depreciation and the

conclusions in Table 8.2 support the sixth hypothesis of this thesis: *the application of IFRS convergence in 2006 results in an increase in the unconditional conservatism of public enterprises in China.*

### 8.3 Impacts of state ownership of enterprises

In order to examine the impacts of state ownership of companies, the entire sample is divided into two groups depending on the ultimate ownership of companies. SOE group consists of companies controlled by government departments and governmental agents. The results of this effect have been documented in Table 8.3. This section of the thesis focuses on comparing the parameters of IFRS across the SOEs and non-SOEs groups.

**Table 8.3: The influence of IFRS convergence on unconditionally conservative accounting for SOEs and non-SOEs**

	(1) SOEs	(2) non-SOEs
<i>IFRS</i>	<b>-0.215<sup>***</sup></b> (-23.34)	<b>-0.210<sup>***</sup></b> (-15.12)
<i>R</i>	0.00575 <sup>*</sup> (2.46)	0.00214 (0.89)
<i>R<sub>t-1</sub></i>	0.000545 (0.22)	0.00198 (0.92)
<i>R<sub>t-2</sub></i>	-0.00247 (-0.55)	0.00100 (0.48)
<i>R<sub>t-3</sub></i>	0.00225 (1.38)	-0.00141 (-0.31)
<i>R<sub>t-4</sub></i>	0.00287 (1.00)	0.0120 <sup>***</sup> (3.77)
<i>R<sub>t-5</sub></i>	-0.000643 (-0.20)	0.00669 <sup>*</sup> (2.24)
<i>R<sub>t-6</sub></i>	-0.00397 (-1.63)	-0.000751 (-0.17)
Constant	0.578 <sup>***</sup> (107.14)	0.506 <sup>***</sup> (64.41)
Observations	4518	2251
R-squared (with Fixed Effects)	0.544	0.522

Notes: Columns 1 and 2 present the results for state-owned enterprises and non-state-owned enterprises in the periods before and after the year 2006. The baseline regression models are established by Beaver and Ryan (2000), and can be used to measure unconditional accounting conservatism.  $R_{t-j,i}$  is the current and lagged annual share returns of firm  $i$  in the past six years.  $j = 0, 1, 2, 3, 4, 5, 6$ . BTM is the book value-to-market value ratio of the firms. IFRS is a dummy variable, which is equal to one if Chinese-listed firms adopt IFRS-based new standards and equal to 0 if otherwise.  $t$  statistics are shown in the parentheses. \*, \*\*, \*\*\* represent that statistical results are significant at 10%, 5% and 1%, respectively.

Columns 1 and 2 in Table 8.3 present the unconditional conservatism of SOEs and non-SOEs in the

pre- and post-2006 periods respectively. From this, it can be derived that the estimated parameters of the IFRS of the SOEs group dropped significantly by -0.215 in the post-2006 period, while the estimated parameters of the IFRS of the non-SOEs group decreased significantly by -0.210 in the post-2006 period, which is slightly less than the reduction of the SOEs group. These estimated parameters are inversely proportional to unconditional conservatism. From the two sets of data, it can be concluded that the new standards have led to a significant increase in the unconditional conservatism of both the SOEs group and the non-SOEs group. In addition, a comparison of the estimated parameters of IFRS in the two groups reveals that the non-SOEs group is impacted less by a change in standards than the SOEs group.

As discussed in the hypothetical development, this is mainly due to the fact that the SOEs in the pre-2006 period possess more idle assets, which cannot be depreciated under the former standards. This means that the SOEs need to depreciate more idle assets after IFRS convergence and enhance unconditional conservatism more than the non-SOEs. Thus, after following Chinese new standards, the increase in the degree of unconditionally conservative accounting is higher in SOEs compared with companies with non-SOEs. In light of the above observations, this result can be said to be consistent with the seventh hypothesis of this thesis, that *The implementation of new Chinese standards has a greater positive impact on state-owned enterprises in terms of unconditionally conservative accounting than non-state-owned enterprises.*

## 8.4 Sensitivity analysis

The robustness of the above results as compared to an alternative method for unconditional conservatism will be evaluated in this section. In response to some researchers' queries on the BTM measurement method, Qiang (2007) made further improvements to the BTM model proposed by Beaver and Ryan (2000).  $R_t$ , as an alternative variable to news, includes both good news (positive annual share returns) and bad news (negative annual share returns). However, the Beaver and Ryan (2000) model suggests that unexpected gains (positive annual share returns) and losses (negative annual share returns) are confirmed by the accounting system at the same rate. That is, it is assumed that the book value is symmetric in reflecting the current and lagged good and bad news. It indicates that  $\sum_{j=0}^6 \beta_j R_{t-j,i}$  only captures the symmetrical lag in the book-to-market ratio to good news and bad news. This is obviously unreasonable and conflicts with the views put forth by Basu (1997). To overcome these shortcomings, Qiang (2007) modified Beaver and Ryan's model (2000):

$$BTM_{t,i} = \alpha_t + \alpha_i + \sum_{j=0}^6 (\beta_j RET_{t-j,i} + \beta_j DR_{t-j,i} * RET_{t-j,i}) + \varepsilon_{t,i} \quad (7)$$

Where BTM is the book value-to-market value ratio of firms and  $RET_{t-j,i}$  is the current and lagged

annual share returns of firm  $i$  in the past six years.  $j = 0, 1, 2, 3, 4, 5, 6$ .  $DR$  is an indicator variable equal to one if the value of  $RET$  is negative and zero otherwise.

Model (7) assumes that the book value is asymmetric in reflecting both good and bad news. Therefore,  $\sum_{j=0}^6(\beta_j RET_{t-j,i} + \beta_j DR_{t-j,i} * RET_{t-j,i})$  captures the asymmetrical lag in the book-to-market ratio to good news and bad news.  $\alpha_i$  can capture more accurate and reasonable bias components in the BTM ratio employed to measure unconditional conservatism.

On the basis of model (7), an IFRS dummy variable is introduced to examine the effect of IFRS convergence on unconditional conservatism. The model is in accordance with the following equation:

$$BTM_{t,i} = \alpha_t + \alpha_i + \beta_1 IFRS + \sum_{j=0}^6(\beta_j RET_{t-j,i} + \beta_j DR_{t-j,i} * RET_{t-j,i}) + \varepsilon_{t,i} \quad (7)$$

where  $IFRS$  is a dummy variable, which is equal to one if Chinese-listed firms adopt IFRS-based new standards and equal to 0 if otherwise. Similar to equation (6), if  $\beta_1$  in equation (7) is negative, it indicates that the adoption of IFRS-convergent standards has improved the unconditional conservatism of the public enterprises in China. Otherwise, the adoption of IFRS-convergent standards can be said to have decreased the unconditional conservatism of the public enterprises in China. The regression results of the improved model are shown in Table 11.4.1.

**Table 8.4.1: Unconditional conservatism pre- and post-IFRS Adoption**

	(1) Full Sample	(2) Balanced sample
<b><i>IFRS</i></b>	<b>-0.182***</b> (-19.36)	<b>-0.150***</b> (-11.97)
<i>RET</i>	0.00723** (2.98)	0.00465 (1.74)
<i>RET</i> <sub><i>t</i>-1</sub>	0.00119 (0.88)	-0.000787 (-0.52)
<i>RET</i> <sub><i>t</i>-2</sub>	0.000732 (0.43)	-0.000318 (-0.23)
<i>RET</i> <sub><i>t</i>-3</sub>	0.00650*** (3.36)	0.00349** (2.62)
<i>RET</i> <sub><i>t</i>-4</sub>	0.00190 (0.67)	0.00102 (0.33)
<i>RET</i> <sub><i>t</i>-5</sub>	0.00143 (0.69)	-0.0000133 (-0.01)
<i>RET</i> <sub><i>t</i>-6</sub>	0.00149 (0.54)	-0.000946 (-0.34)
<i>DR</i>	0.129*** (19.26)	0.131*** (15.07)
<i>DR</i> <sub><i>t</i>-1</sub> * <i>RET</i> <sub><i>t</i>-1</sub>	0.0364*** (5.72)	0.0558*** (7.16)

$DR_{t-2} * RET_{t-2}$	0.0449*** (6.72)	0.0750*** (9.56)
$DR_{t-3} * RET_{t-3}$	0.151*** (25.13)	0.128*** (16.82)
$DR_{t-4} * RET_{t-4}$	-0.0277*** (-4.52)	-0.00366 (-0.45)
$DR_{t-5} * RET_{t-5}$	0.0429*** (6.48)	0.0435*** (5.16)
$DR_{t-6} * RET_{t-6}$	0.0865*** (14.66)	0.0921*** (12.34)
Constant	0.296*** (19.03)	0.208*** (11.43)
Observations	6776	3466
R-squared (with Fixed Effects)	0.551	0.490

Notes: Table 8.4.1 reports the impacts of IFRS-adoption on the level of unconditional conservatism based on Qiang's (2007) method. Columns 1 and 2 present the results for the full sample and balanced sample respectively.  $RET_{t-j,i}$  is the current and lagged annual share returns of firm  $i$  in the past six years.  $j = 0, 1, 2, 3, 4, 5, 6$ . BTM is the firms' book value-to-market value ratio. DR is a dummy variable, which is equal to one if  $RET < 0$  and equal to 0 if otherwise. IFRS is a dummy variable, which is equal to one if Chinese-listed firms adopt IFRS-based new standards and equal to 0 if otherwise.  $t$  statistics are shown in the parentheses. \*, \*\*, \*\*\* represent that statistical results are significant at 10%, 5% and 1%, respectively.

Table 8.4.1 additionally reports the results of the effects of IFRS convergence based on Qiang's (2007) measure of firms' conservatism for a full and balanced sample. As has been demonstrated in Table 8.4.1, the coefficients on IFRS for both full and balanced samples are negative and statistically significant at the 1% level. As discussed above, the bias component represents unconditional conservatism and is inversely proportional to unconditional conservatism. This indicates that the IFRS-convergent leads to an increase in unconditional conservatism, which is consistent with the result based on Beaver and Ryan's (2000) model as shown in Table 8.2. Thus, the empirical finding for the sixth hypothesis is robust against different choices of unconditional conservatism estimated in both full and balanced samples.

**Table 8.4.2: The influence of IFRS convergence on unconditional conservatism based on Qiang's (2007) measure for SOEs and non-SOEs**

	Full Sample		Balanced Sample	
	(1) SOEs	(2) non-SOEs	(3) SOEs	(4) non-SOEs
<b>IFRS</b>	<b>-0.179***</b> (-16.33)	<b>-0.192***</b> (-10.58)	<b>-0.156***</b> (-10.59)	<b>-0.138***</b> (-5.71)
<b>RET</b>	<b>0.0116***</b> (3.83)	<b>0.00472*</b> (2.17)	<b>0.0147***</b> (3.85)	<b>0.00361</b> (1.85)
<b>RET<sub>t-1</sub></b>	<b>0.00239</b>	<b>0.00188</b>	<b>-0.00164</b>	<b>0.000233</b>

	(1.32)	(0.84)	(-0.38)	(0.10)
$RET_{t-2}$	0.00179	0.00175	-0.00246	0.00142
	(0.53)	(1.30)	(-0.53)	(1.02)
$RET_{t-3}$	0.00724*	0.00560**	0.00387*	0.00302
	(2.24)	(2.87)	(2.05)	(1.59)
$RET_{t-4}$	-0.00114	0.00872**	-0.00193	0.00721*
	(-0.52)	(2.76)	(-0.93)	(1.99)
$RET_{t-5}$	0.0000508	0.00515*	-0.00154	0.00388
	(0.02)	(2.07)	(-0.88)	(1.47)
$RET_{t-6}$	-0.0000416	0.00520	-0.00235	0.00173
	(-0.01)	(1.91)	(-0.96)	(0.57)
$DR$	0.128***	0.130***	0.131***	0.133***
	(15.17)	(11.94)	(11.60)	(9.65)
$DR_{t-1} * RET_{t-1}$	0.0359***	0.0372***	0.0523***	0.0607***
	(4.56)	(3.46)	(5.24)	(4.80)
$DR_{t-2} * RET_{t-2}$	0.0382***	0.0591***	0.0655***	0.0907***
	(4.59)	(5.31)	(6.50)	(7.34)
$DR_{t-3} * RET_{t-3}$	0.153***	0.143***	0.136***	0.108***
	(19.97)	(15.08)	(13.48)	(9.93)
$DR_{t-4} * RET_{t-4}$	-0.0362***	-0.0102	-0.0138	0.0129
	(-4.88)	(-0.98)	(-1.40)	(0.95)
$DR_{t-5} * RET_{t-5}$	0.0367***	0.0564***	0.0399***	0.0500***
	(4.40)	(5.44)	(3.64)	(3.93)
$DR_{t-6} * RET_{t-6}$	0.0864***	0.0876***	0.0923***	0.0876***
	(11.99)	(8.62)	(10.22)	(6.50)
Constant	0.332***	0.223***	0.252***	0.128***
	(17.43)	(8.52)	(11.09)	(4.26)
Observations	4518	2251	2276	1190
R-squared (with Fixed Effects)	0.562	0.538	0.517	0.453

Notes: Columns 1 and 2 stands for the impacts of IFRS-based standards on the unconditional conservatism level of SOEs and non-SOEs based on a full sample. Columns 3 and 4 report the results of SOEs and non-SOEs based on a balanced sample.  $RET$  is calculated as market returns on equity over the fiscal year adjusted by share distributions.  $RET_{t-j,i}$  is the current and lagged annual share returns of firm  $i$  in the past six years.  $j = 0, 1, 2, 3, 4, 5, 6$ .  $DR$  is a dummy variable, which is equal to one if  $RET < 0$  and equal to 0 if otherwise.  $IFRS$  is a dummy variable, which is equal to one if Chinese-listed firms adopt IFRS-based new standards and equal to 0 if otherwise.  $t$  statistics are shown in the parentheses. \*, \*\*, \*\*\* represent that statistical results are significant at 10%, 5% and 1%, respectively.

Columns 1 and 2 in Table 8.4.2 present the conditional conservatism of SOEs and non-SOEs for the full sample. As is depicted in columns 1 and 2, the estimated coefficient of IFRS of the SOEs group (-0.179) is slightly higher than that of the non-SOEs group (-0.192), indicating that in a full sample, the non-SOEs group is impacted more by the change in standards than the SOEs group. This result is based on Qiang's (2007) measure, which is contrary to the previous conclusion based on Beaver and

Ryan's (2000) model. However, whether it is Table 6 or columns 1 and 2 in Table 8.4.2, there is only a slight difference between the SOEs group and the non-SOEs group. If those firms that went public after the year 1996 are controlled to balance the sample, columns 3 and 4 show that the coefficient of IFRS of the SOEs group (-0.156) is lower than that of the non-SOEs group (-0.138), indicating that in a balanced sample, the non-SOEs group is impacted less by the change in standards than the SOEs group. This result is consistent with the result based on Beaver and Ryan's (2000) model shown in Table 8.3, suggesting that balancing the sample will affect the conclusion based on Qiang's (2007) measure, but it will not affect the conclusion drawn from Beaver and Ryan's (2000) model. Thus, the empirical findings for the seventh hypothesis are not supported by different choices of unconditional conservatism estimates in full samples. However, they are more robust against different measures in balanced samples.



# Chapter Nine: Conclusions

## 9.1 Summary of main findings

Based on the extant literature on conservatism and China's special institutional background, this thesis uses empirical research methods to study the association between IFRS-convergent accounting standards and the conservatism for listed companies in China from 2002 to 2010. This thesis first examines the treatment effects of IFRS-based new standards on the level of conditional conservatism and the main findings are as follows:

1. Either through the accrual-based measure method or Basu's measure method, empirical evidence suggests that listed Chinese enterprises kept a higher level of conditional conservatism, but firms reduced their conditional conservatism level after the implementation of IFRS-based standards in 2006. The impact of IFRS adoption on conditional conservatism in China is not fundamentally different from that in Europe. Due to improved accounting quality and comparability, IFRS convergence alters the ex-ante information asymmetry between management and external stakeholders, and shifts the monitoring costs between the principal and agent, which in turn reduces the demand for conservatism. This thesis therefore draws a conclusion similar to the research by André et al. (2015) regarding the effects of IFRS convergence on conditionally conservative accounting in Europe.

In order to explore the detailed influencing mechanism between IFRS adoption and firms' conditional conservatism, this thesis investigates the determinants of reducing demand for conditional conservatism in Chinese public enterprises after IFRS adoption.

2. Since the development of markets' information environment after the IFRS convergence reduces the information asymmetry, the findings of this thesis suggest that the ex-ante information asymmetry, which shaped conservatism demands (LaFond and Watts, 2008), plays a moderating role between IFRS adoption and conditional conservatism. The conditional conservatism in the high ex-ante information asymmetry group reduces more than in the low ex-ante information asymmetry group after 2006. Moreover, the conditional conservatism in both groups reaches a similar level after 2006.
3. This thesis also finds that SOE groups under standards before 2006 have a lower level of conditionally conservative accounting, which is the same as in previous studies (Chen et al., 2010). However, after the IFRS convergence in 2006, the decline of conditional conservatism in the non-SOE group is higher than that of the SOE group, and the difference in conditional conservatism between the non-SOE group and the SOE group reduced. This illustrates that the new standards take into account the differences between SOEs and non-SOEs, and increase the comparability of financial reports between SOEs and non-SOEs.

4. In addition, since the development of markets' information environment after the IFRS convergence reduces the monitoring costs, the findings of this thesis suggest that the monitoring costs, which lead to debt holder's conservatism demands (Chen et al., 2010), also plays a moderating role between IFRS convergence and conditional conservatism. IFRS convergence leads to a larger decline in the degree of conditional conservatism for firms with higher monitoring costs compared to those with lower monitoring costs.
5. This thesis also finds that after following IFRS-based standards, the reduction in the degree of conditionally conservative accounting is higher with firms who borrow from state-owned banks compared with firms who borrow from non-state-owned banks.

Thereafter, this thesis examines the treatment effects of IFRS adoption on unconditional conservatism and the main findings are as follows:

1. Since Chinese companies face a serious problem due to a large number of idle assets, which have not depreciated under the former standards but shall depreciate under the new standards, the impact of change with regard to depreciation is higher than capitalisation. Therefore, this thesis finds that the IFRS-convergent GAAP in 2006 increases unconditional conservatism in Chinese public enterprises.
2. As SOEs face more problems of idle assets, this thesis also finds the new standards have led to a significant increase in the unconditional conservatism of both the SOE and the non-SOE groups. However, the non-SOE group is impacted less by a change in standards than the SOE group.

## 9.2 Significance

The study of this thesis has a certain theoretical significance. With regard to the demands for conditional conservatism, far fewer empirical papers investigate these demands. The reason is that scholars lack a solidly casual experimental environment in which the determinant is exogenous. The traditional cross-sectional-regression analysis only shows the association between conditional conservatism and another variable. These early studies lacked a discussion on causal relationships. For example, Basu (1997) and Holthausen and Watts (2001), examined the changes in conservatism with the different litigation systems, but did not conduct cross-sectional tests or event studies. Other recent articles, such as Chen et al. (2010), Hui et al. (2012), Ahmed and Duellman (2013), and Cheng et al. (2015), also did not solve causality problems. Only studies that use institutional switches as the natural experimental setting (Jayaraman, 2012; Jayaraman and Shivakumar, 2013) have strong persuasiveness in causality. The caveat of this research methodology, however, is that the nature of institutional change must be interpreted correctly. Second, most of the research did not answer the question of how accounting standards affect the firm's choice of conditional conservatism, which means these studies, motivated by policy analysis, lack the critical foundation. This thesis establishes

the causality flow based on current literature on conservatism, and then discusses the effect of China's IFRS adoption on conditional conservatism.

This thesis is also significant for standards-setting. For a long time, one of the main objectives of China's accounting standards and system reforms was to introduce internationally accepted accounting standards and accounting methods, and fully coordinate or converge with international standards for improving the quality of accounting information of listed companies. IFRS convergence improves accounting quality and comparability, which reduces the demand for conditional conservatism. In addition, a firm's conservatism level is a function of information asymmetry, debtholder's monitoring incentives, and a firm's capital structure. Due to the difference between China, Europe and the United States in terms of market, the state ownership of firms and debtholders are important determinants of the demand for conditional conservatism. This thesis also finds that the standards and system reforms have considered the difference of firms' ownership in the demand for conservatism and motivation for improving accounting quality, and also finds that the difference between SOEs and non-SOEs is decreasing.

This research is also significant for the financial analysis of listed companies because a conservative or aggressive accounting policy will affect the reported performance, the quality of earnings, and so on. For instance, a company with a conservative accounting policy generally implies lower reported earnings and a higher quality of earnings. Therefore, when analysing the financial status of a company, it is necessary to first analyse the accounting policies, evaluate the company's accounting policies, and then conduct valuations, credit analysis, and other uses (Palepu et al., 2002). The empirical evidence in this thesis demonstrates that China's listed companies adopt less conservative accounting policies after IFRS convergence. Therefore, in the financial analysis, it should be considered that the firm may, through less conservative earnings, improve its performance after IFRS convergence.

### **9.3 Research limitations and future perspective**

The information asymmetry of enterprises is a very complex issue. There are many measurement methods of information asymmetry, such as the standard deviation of companies' operating cash flow, M/B ratio, pin index, Bid-ask Spread, and so on. So far, no consensus has been established with regard to the most suitable method for the Chinese market. Bid-ask Spread and pin index, based on high frequency trading data, are generally considered to be better measurements for information asymmetry. However, this thesis uses the standard deviation of firms' operating cash flow (M/B ratio proxied ex-ante information asymmetry of firms) due to a lack of related high frequency trading data. Therefore, future research can adopt Bid-ask Spread and pin as indexes of information asymmetry to reconfirm the findings of this thesis.

With regard to conditional conservatism, existing conclusions indicate that it is a means to increase the contractual efficiency (Watts, 2003; LaFond & Watts, 2008; and Khan & Watts, 2009), but there is not adequate theory supporting the advantages of unconditional conservatism. Evidence from Ahmed (2002) shows that unconditional conservatism can reduce the conflict between shareholders and creditors. However, Zhang (2002) also has evidence that unconditional conservatism reduces the quality of accounting information. The influence of unconditional conservatism on accounting information requires further study. In addition, the correlation between conditional and unconditional conservatism is still uncertain. Beaver and Ryan (2005) show that there is no definite correlation between conditional and unconditional conservatism; Qiang (2007), however, finds a negative correlation. Since China's new standards affect both conditional and unconditional conservatism, the negative correlation between conditional and unconditional conservatism will mean that a decrease in conditional conservatism after IFRS convergence may be overestimated. Further study would need to test and confirm the correlation between conditional and unconditional conservatism and separate the effects of unconditional conservatism on conditional conservatism.

# Appendix

## Methods Review

### Measurement methods

At present, there are five main categories of the measurement method in accounting conservatism in the research literature: net assets measurement method; earnings and accruals measurement method; earnings–share return measurement method; accrual–cash flow measurement method; and event research method. Table 3.1 presents these methods with the relative literatures.

**Table 3.1 Conservatism measurement method**

Categories of measurement method	Specific indicators or method	Representative literature
Net assets measurement method	Valuation model	Ahmed (2001) Feltham — Ohlson (1995)
	The ratio of market value to book value (MTB)	Beaver and Ryan (2000)
Earnings and accruals measurement method	Earnings persistence	Brooks and Buckmaster (1976) Basu (1997)
	The degree of skewness and fluctuation of earnings and accruals	Ball et al. (2000)
	Cumulative accrual	Givoly and Hayn (2000)
Earnings — share return measurement method	The ratio of regression coefficients of earnings on the ‘bad news’ to ‘good news’	Basu (1997)
	The ratio of $R^2$ of earnings on the ‘bad news’ to ‘good news’	Pope and Walker (1999)
Accrual — cash flow measurement method	The ratio of regression coefficients and $R^2$ of accrual on the ‘bad news’ to ‘good news’	Ball et al. (2005)
Event research method	Earnings response coefficient	Basu (1997)

	measurement (ERC)	
	Share returns measurement	McNichols (1988)

(Source: author)

## Net assets measurement method

The net assets measurement method is mainly used to measure unconditional conservatism. Unconditional conservatism refers to a company's tendency to the accounting treatment model of accelerated expense confirmation or deferred revenue confirmation at the initial recognition of liabilities or assets. The loss of assets is timely and adequately recognised and a delay is recognised for the increase of assets. This will result in the net assets being undervalued and underestimated; the amount can be used as the representative degree of conservatism.

In the specific application of this method, it includes the valuation model method and the ratio of the market value to the book value method.

## Valuation model method

The valuation method measures the market value of a firm as the sum of the book value of the firm and the net present value of its expected future abnormal earnings, which is measured by the firm's accounting earnings minus the companies' cost of capital, multiplied by the companies' book value at the start of the reporting period (Feltham and Ohlson, 1995). In other words, in the valuation model, the market value of a firm is a linear function of abnormal operating earnings, operating assets at the beginning of a period, capital expenditures, or current investments in operating assets (Ahmed et al., 2002).

Differences in accounting policies, i.e. whether a firm adopts an unbiased or a conservative accounting policy, could significantly influence the market value of a company in the valuation method through their influence on expected future abnormal earnings. One pioneering study of the net assets measurement method is Feltham and Ohlson's (1995) research on the differential application of valuation and net surplus accounting for financial and operating activities. They modeled the relationship between the market value of a company and accounting data that is generated from financial and operating activities, and indicated that the book value is equal to market value when only financial activities exist in the firm. Differences will generate if the firm has operating activities. Thus, the market value is also equal to the book value plus the net present value of expected future abnormal earnings under the assumption of clean surplus accounting. Consequently, a linear function can be established to model the dynamics of the information set with abnormal earnings, accounting conservatism, and growth as its parameters.

Feltham and Ohlson (1995) propose that expected future accounting numbers have an essential function in the valuation of assets. Furthermore, according to Feltham and Ohlson (1995), asset values are also affected by current accounting numbers. Thus, both current and expected accounting numbers determine asset values. The key features of Feltham and Ohlson's (1995) valuation method are outlined below:

### ***The dichotomy between conservative accounting and unbiased accounting***

An important concept in Feltham and Ohlson (1995) valuation model is the dichotomy between the conservative and unbiased accounting. According to Feltham and Ohlson (1995), under unbiased accounting the market value of assets is the weighted average of a 'flow' model and a 'stock' model, which are respectively based on the earnings and book value of the enterprise, plus the mean variable adjusting for miscellaneous other information. By contrast, under conservative accounting, the market value of assets needs an additional adjustment for the understated value of operating assets, in addition to the valuation function under unbiased accounting. The implication of these different valuation functions is that the market value is equal to the book value if accounting is unbiased, or greater than the book value if accounting is conservative.

### ***The relations between market value and earnings***

Under Feltham and Ohlson's (1995) valuation method, whether the accounting policy is unbiased or conservative also has implications for the relations between market value, and its changes and contemporaneous earnings, as well as the relations between book value and future earnings. Under unbiased accounting, accounting earnings and changes in the market value are equal, and the accounting rate of return and risk-free rate are also equal. Under conservative accounting, however, these relationships are more complex. When the value of operating assets is expected to increase, both the market value and its changes would be larger than earnings under conservative accounting. In other words, the effects of accounting conservatism and growth on the relations between market value and earnings are synergistic. As for the relations between book value to future earnings, the effects of conservative accounting are even more subtle. Assuming a 'full pay-out' dividend policy and, therefore, a constant book value, Feltham and Ohlson (1995) demonstrate that the effect of conservative accounting on earnings (i.e. the book rate of return) differs depending on growth: when there is no growth, the earnings increase is finite under conservative accounting, whereas the earnings increase is infinite if there is growth.

### ***The impacts of incremental changes in earnings and assets on value***

Through their analysis, Feltham and Ohlson (1995) propose that, when accounting is conservative, the increments of cash earnings are worth less in terms of current period earnings than the increments in non-cash earnings, i.e. cash earnings have 'lower quality' than accrual earnings when the accounting measurements are conservative. The same is true for next-period earnings, i.e. the increments of cash earnings give rise to higher next-period earnings than the increments in non-cash earnings.

Throughout the relations explored in Feltham and Ohlson's (1995) valuation model, a central idea is that accounting conservatism leads to unrecorded goodwill, which is either reflected in the underestimated value of existing assets or the underestimated expectation of the net present value of future investment projects. As a result, a firm's investments in operating assets are fully capitalised under unbiased accounting, whereas such investments are partially capitalised and partially expensed under conservative accounting. Therefore, in Feltham and Ohlson's (1995) valuation method, an enterprise's value under

unbiased accounting and its value under conservative accounting are only equal if the firm invests in projects with zero net present value, i.e. there is no unrecorded goodwill. In all other cases, conservative accounting practices lead to lower earnings in the early stages of an investment project and larger earnings in the later stages than unbiased accounting practices.

Ahmed et al (2000)'s model is used for testing the relationship between conservative accounting and the valuation weight on operating assets, which is in turn developed from Feltham and Ohlson (1996)'s method. The application of this method has two steps: finding the valuation weight on operating assets, and determining the relationship between this valuation weight and the conservative accounting proxy.

#### Step one:

The first step of the model is to find the valuation weight on operating assets by ascertaining the correlation between firm-specific goodwill and operating assets. Following Feltham and Ohlson (1996)'s method, Ahmed et al (2000) developed the following model to ascertain this correlation:

$$V_t = oa_t + \alpha_1 ox_t^a + \alpha_2 oa_{t-1} + \alpha_3 ci_t \quad (1)$$

In this model, the market value of a firm in the year  $t$  ( $V_t$ ) is linearly related to abnormal operating earnings ( $ox_t^a$ ), operating assets at the beginning of the period ( $oa_{t-1}$ ), and investments in operating assets in the current period ( $ci_t$ ).

Recasting (1) for firm  $i$  in terms of goodwill ( $g_t$ ), i.e. unrecorded market value of firms, the equation can be established as follows:

$$g_{it} = V_{it} - oa_{it}$$

$$g_{it} = \alpha_0 + \alpha_1 ox_{it}^a + \alpha_2 oa_{it-1} + \alpha_3 ci_{it} + \varepsilon_{it} \quad (2)$$

where

$$\alpha_1 = \frac{\gamma}{R - \gamma}, \alpha_2 = \frac{R(\gamma - \delta)}{R - \gamma}, \text{ and } \alpha_3 = \frac{R(k - R + \gamma)}{(R - \omega)(R - \gamma)}$$

$g_{it}$  is the goodwill per share, and goodwill is calculated based on market value minus book value.  $ox_{it}^a$  is abnormal earnings per share measured as earnings per share adjusted for minority interest and interest revenue/expenses.  $oa_{it-1}$  stands for the operating assets per share in the last period, which is measured as the opening book value of ordinary shares in the last period adjusted for long-term and short-term debt, marketable securities, minority interest and cash.  $ci_{it}$  represents the cash investment per share calculated based on changes in operating assets plus amortization and depreciation expense. Furthermore, in Ahmed et al's (2000) specification of model (2), the capital cost is the one-year T-bill rate multiplied by operating assets at the beginning of the period plus four per cent.

#### Step 2.

In the second step of this method, the relationship is determined between valuation weight on operating assets and the conservative accounting proxy. Similar to Beaver and Ryan (2000), Ahmed et al (2000) employed four proxies of conservative accounting: one minus amortization and depreciation expense deflated by the sum of property, plant and equipment and intangible assets at the beginning of period, R&D expenditure/sales, advertising expenditure/sales, and whether or not a firm uses LIFO as its inventory



method for the majority of the firm-year observations in the data sample.

Adapted from Ahmed et al (2000) in order to measure the impacts of these conservative accounting proxies on the valuation weight of operating assets, the following model is used:

$$\alpha_{2it} = b_0 + b_1\delta_{it} + b_2RD_{it} + b_3ADV_{it} + b_4ADV_{it} + b_5LIFO_{it} + b_6SIZE_{it} + e_{it} \quad (3)$$

where  $\alpha_2$  stands for the firm-specific valuation parameter on lagged operating assets, which is estimated from model (2).  $\delta_i$  is the depreciation parameter estimated for firm  $i$ , and is calculated as average of 1 - (depreciation and amortization expense / property, plant and equipment and intangible assets at the beginning of the period) over the data sample period.  $RD_i$  is the research and development intensity parameter of firm  $i$ , which is evaluated as the average of development expenses deflated by sales over the data sample period.  $ADV_i$  is firm  $i$ 's advertising intensity measure, which is estimated as the average of advertising expenses deflated by sales over the data sample period.  $LIFO_i$  is a binary measure of firm  $i$ 's inventory valuation method, and is equal to one if the firm employs LIFO to value its inventory more than half of the time in the data sample period.  $SIZE_i$  is the logarithmic of firm  $i$ 's average market value of equity during the data sample period.

According to Ahmed et al's findings (2000), the coefficients of conservative accounting proxies on operating assets valuation in (3) show positive correlations between operating assets valuation and accounting conservatism, which is in accordance with the predictions of Feltham and Ohlson's (1996) method and Beaver and Ryan's (2000) results. For the purpose of this study, all four proxies of accounting conservatism, i.e. depreciation parameter, research and development intensity, advertising intensity measure and use of LIFO for inventory valuation method, are used to estimate their correlations with operating assets valuation.

### ***Assumption***

The establishment of Feltham and Ohlson's (1995) model involves a number of key assumptions. The valuation method is based mainly on the fundamental assumption that the measurement on accounting should obey the clean surplus relationship, meaning that the alterations in book value should be reflected as either dividends or income. First of all, under the assumption of clean surplus accounting, Feltham and Ohlson (1995) infer that the present value of expected future abnormal earnings is equal to unrecognised goodwill. Consequently, expectations about future abnormal earnings can affect a firm's goodwill and value of assets. Secondly, Feltham and Ohlson's (1995) valuation model incorporates Modigliani and Miller's (1958; 1961) corporate finance theory, which states that a company's value is independent of its capital structure, implying that financing activities have zero net present value. Since the financial assets arising from these financing activities have no additional value except for their book value, an enterprise's goodwill can only be attributed to its operating activities and is equal to the present value of the enterprise's future expected abnormal operating earnings. Thirdly, Feltham and Ohlson (1995) assume that the market value of a company is equal to the sum of the present value of its future expected cash flows and the value of its financial assets. These three assumptions play a central role in Feltham and Ohlson's (1996) valuation model. Taking into consideration Feltham and Ohlson's (1995) study on the differential

accounting treatment of operating activities and financing activities under unbiased and conservative accounting, one can infer that firms employing more conservative accounting policies will assign less positive valuation weight to financial assets than to operating assets.

### ***Advantages***

By separating financial assets from operating assets in valuation under unbiased/conservative accounting policies, the valuation model offers more accurate insights into the relations between market value, book value, and current/expected abnormal earnings. It thereby enhances the accuracy and effectiveness of asset value measurement, particularly when future cash flows are uncertain and/or the investment project has positive NPV. Ahmed et al. (2002) provide empirical support for the valuation model's effectiveness, finding that accounting-based conservatism in the valuation model is positively related to the weight of operating assets in valuation, and that its explanatory power is evident even after controlling for various factors such as firm size, book value growth, and firm leverage. The conservative parameters in the valuation model also provide a good indicator of the degree of conservatism in a firm's accounting policy, as the relation between the conservative parameters in the valuation model and accounting-based proxies for conservatism is quite strong, especially for enterprises with high levels of profitability (Ahmed et al., 2002).

### ***Disadvantages***

The effectiveness of the valuation method is limited in scope. In particular, the linear information dynamics assumed in the valuation method provide a poor description of the degree of conservative accounting and the differences between book value and market value in enterprises with low growth, low profitability, and high intensity of assets (Ahmed et al., 2002). As a result, the valuation model is an unreliable predictor of the bias component of the book-to-market ratio in conservatism (Myers, 1999). The valuation model considers conservatism only in terms of the depreciation of operating assets and ignores other sources of conservatism such as delays in revenue recognition. The valuation model also fails to take into account the factors underlying the information dynamics, such as the rate of depreciation adopted. These limitations of the valuation model mean that it cannot fully capture the implications of conservative accounting.

## **The book value-to-market value ratio valuation method (BTM)**

Please see section 5.6

## **Earnings and accruals measurement method**

The earnings and accruals method of measuring the degree of accounting conservatism determines accounting conservatism with negative cumulative accruals. This method is based on the concept that losses are less persistent than gains under conservative accounting, in which the increases in expected asset

value are recognised in future periods rather than at the time of their occurrence. By contrast, losses are recognised immediately at the time they occur, rather than recognised as cash flow decreases in the future. As a result, accounting conservatism causes accruals to be asymmetric, as gains are only partially accrued and losses are fully accrued. Furthermore, the capitalisation of future cash flows associated with losses means that losses result in significantly larger accruals compared with gains. The implication of this is that accounting conservatism will result in negative cumulative accruals, as well as understated cumulated accruals, making them capable of measuring the degree of conservatism.

There are two important notions in the earnings and accruals measurement method: earnings persistence, and the degree of skewedness and fluctuations of earnings and accruals. First, unlike earnings, losses do not recur in future periods under conservative accounting. This means that losses are less persistent than earnings, and increases of earnings and that decreases of earnings and losses are more transitory than earnings and earnings increases. The persistence of earnings (or the transience of losses) thus provides a way to measure accounting conservatism. Second, under conservative accounting, the distribution of earnings and accruals will be negatively skewed due to the asymmetric capitalisation of cash flows associated with earnings and losses. Therefore, specific measures of conservatism, earnings persistence, and the skewedness and fluctuations of earnings and accruals, as well as cumulated accruals, are discussed in detail in the rest of this section.

## Earnings persistence

Measuring accounting conservatism with the persistence of earnings was based on the empirical evidence that negative changes in earnings are more likely to reverse, i.e. negative changes in earnings are less persistent than positive changes in earnings. For example, Watts (1993) and Basu (1997) predicted that, compared with positive changes in earnings, it is more likely for losses (negative earnings) to reverse in the next period. Notable research in this field includes Brooks and Buckmaster's (1976) study on the time series property of accounting income, and Basu's (1997) study of the asymmetric timeliness of earnings and conditional conservatism.

Basu (1997) also predicts that unexpected decreases in earnings tend to be more temporary, while unexpected increases in earnings tend to be more persistent. This hypothesis was tested cross-sectionally with price-deflated earnings data with the following formula:

$$X_{it}/P_{it-1} = \alpha_0 + \alpha_1 D + \beta_0 \Delta X_{it-1}/P_{it-2} + \beta_1 D * \Delta X_{it-1}/P_{it-2}$$

where  $X_{it}$  represents the earnings per share for company  $i$  in fiscal year  $t$ ,  $\Delta X_{it-1}$  and  $\Delta X_{it-2}$  are the changes in earnings of company  $i$  in the year  $t-1$  and  $t-2$ ,  $R_{it}$  stands for the return of company  $i$  from nine months before the end of fiscal year  $t$  to three months after, and  $D$  is the dummy variable, whose values are determined under the following conditions:

- a.  $D=1$  if  $\Delta X_{it-1}/P_{it-2}$  is negative and  $D = 0$  if otherwise;

b.  $D=1$  if  $X_{it-1}/P_{it-2}$  is negative and  $D = 0$  if otherwise;

c.  $D=1$  if  $R_{it}$  is negative and  $D = 0$  if otherwise.

These tests were done by Basu (1997) for both negative and positive changes in earnings, using a sample of 36,394 firms' year data from 1964 to 1990. The first test results show that the intercepts in (1) are negative, which indicates the recognition of unrealised earnings rather than the recognition of unrealised losses and confirms Basu's (1997) first prediction that 'bad news' is reported with more timeliness than 'good news'. The second test results show that the coefficient of lagged earnings for positive earnings is almost zero, which confirms Basu's (1997) second prediction that accounting conservatism will result in more permanent and non-reversing positive changes in earnings.

The results of Basu's (1997) study suggest that positive changes in earnings are persistent and permanent, whereas negative changes in earnings are totally transitory. Basu (1997) explains that this is mainly due to accounting conservatism, which will result in immediate write-offs of asset values in the event of 'bad' news. As losses of expected income are realised in the future, however, the effect of these write-offs on earnings will disappear, which means that negative changes in earnings will be transitory.

### ***Assumptions***

The hypotheses in Basu's (1997) research assume that bad news is more likely to have a concurrent impact on earnings. Based on the findings of Brooks and Buckmaster (1976) and other studies such as Elgers and Lo (1994), Basu (1997) further confirms that positive changes in earnings are permanent and do not reverse, while losses or negative changes in earnings are totally transient. Basu's (1997) study was developed based on the concept of the asymmetry in the recognition of losses and gains. Because of accounting conservatism, a higher standard of verification needs to be applied when recognising the effect of 'good news' (expected gains) and the effect of 'bad news' (expected losses) on financial statements. This means that earnings are recognised at a later date than losses. As a result, good news and bad news have asymmetric impacts on the persistence and timeliness of earnings. Furthermore, Basu (1997) assumes that conservatism influences the properties of earnings and cash flows differently through accruals.

### ***Advantages***

The presence of the various forms of earnings persistence can be quite an accurate indicator of the presence of conservatism. Basu's (1997) findings suggest that, in the presence of conservatism, negative changes in earnings are likely to be less persistent than positive changes in earnings. This is also consistent with Brooks and Buckmaster's (1976) findings, suggesting that earnings persistence can be seen as an indication of conservative accounting practices. More specific measures of earnings persistence, such as the differences between the earnings response coefficients (ERC) associated with negative earnings changes and positive earnings changes, may also be used as more specific and accurate measures of earnings persistence and, therefore, conservatism.

### ***Disadvantages***

Despite clear empirical evidence that earnings persistence is an indicator of the use of conservative accounting principles, there is no research evidence suggesting how different forms of earnings persistence might be used to measure the specific degree of conservatism. While Basu (1997) implies that the differences between the sensitivity of earnings to positive and negative returns in the same period might be used as a measure of the degree of conservatism, there has been no empirical test to support this claim. Therefore, earnings persistence may only be reliably used as an indication of the presence of conservatism, rather than as a measure of the exact degree of conservatism.

### ***Limitations***

While the studies by Brooks and Buckmaster (1976), Basu (1997), and many others have investigated how earnings persistence might manifest in the time series effects of accounting income and the asymmetric timeliness of earnings, there has been no strict test to confirm how conservative accounting practices might result in earnings persistence. Most of the studies assume an intuitive relationship between conservatism and earnings persistence. However, it is possible that earnings persistence might be caused by factors other than accounting conservatism, such as earnings management.

## **The degree of skewness in earnings**

The use of conservative accounting principles suggests that the capitalisation of future cash flows associated with losses will generate larger accruals than gains. This suggests that the distribution of earnings will be negatively skewed in the presence of conservative accounting practices, which means that the degree of the skewedness of earnings can be used as a measure of conservatism.

Ball et al. (2000) measured the conservative accounting and timeliness of accounting incomes based on the way firms' economic incomes are incorporated into accounting incomes over an extended period of time, and they developed a model for incorporating economic income into accounting income. The dependent variable in this model is accounting income, and economic income is measured in terms of the changes in the market value of equity between fiscal years, adjusting for the effects of capital contributions and dividends. Ball et al.'s (2000) model investigates the process by which economic incomes are incorporated into accounting income, and the institutional factors affecting this incorporation. Accounting conservatism is one of the three institutional factors identified by Ball et al. (2000) that affect how accounting income is determined.

Conservative accounting principles and practices result in the immediate write-offs of income when future cash flows are expected to decrease, even though such decreases have not happened yet. By contrast, increases in future cash flows or asset values are not recognised until such increases actually occur. Thus, the application of conservative accounting principles causes discrepancies between economic income and accounting income, as well as the asymmetric incorporation of economic income into accounting income. Therefore, Ball et al.'s (2000) model for determining how conservatism affects the asymmetric incorporation of economic income into accounting income is as follows:

$$NI_{it} = \beta_{1j}RD_{it} + \beta_{2j}R_{it} + \beta_{3j}R_{it}RD_{it} + \varepsilon_{it} \quad (1)$$

where  $NI_{it}$  represents the earnings yield of company  $i$  in fiscal year  $t$ , and  $R_{it}$  is the annual rate of return in fiscal year  $i$ . Here, the earnings yield  $NI_{it}$  is defined as the accounting income of company  $i$  in fiscal year  $t$  scaled by the market value of firm  $i$ 's equity in the previous fiscal year. Similarly,  $R_{it}$  is the changes in the market capitalisation of company  $i$ 's equity in fiscal year  $t$  including dividends and excluding capital contributions scaled by the market value of firm  $i$ 's equity in the previous fiscal year. Therefore,  $NI_{it}$  and  $R_{it}$  represent the accounting income and economic income of firm  $i$  in fiscal year  $t$ .  $RD_{it}$  is the dummy variable, whose value is based on the sign of the firm's stock return.  $\beta_{2j}$  and  $\beta_{3j}$  represent the incorporation of negative and positive economic income in the accounting income of the current year in country  $j$ , respectively.

### ***Assumptions***

Ball et al.'s (2000) model for measuring conservatism through the incorporation of all accounting income is assumed to be equal to the change in the book values of equity between fiscal years. Secondly, it is assumed that the total sum of a company's economic benefit and the total sum of its accounting income are equal over the lifetime of the firm. The validity of the model is also based on the assumption that clean surplus accounting is used, and any violation of clean surplus accounting is not systematically associated with cross-country differences in accounting standards. The changes in economic income are also assumed to be independent over time.

### ***Advantages***

Measuring the level of conservative accounting using the degree of skewedness and fluctuation of earnings has several advantages. First of all, it is relatively free of short-term noise such as a firm's liquidity situation and the mispricing effects. Secondly, it is a comprehensive measure of conservatism as it captures the fundamental aspects of accounting income recognition. Using the degree of skewedness and fluctuation of earnings as a measure of conservatism is particularly effective when there are lags in the incorporation of economic income into accounting income.

### ***Disadvantages***

Using the degree of skewedness and fluctuation of earnings as a measure of conservatism also has several disadvantages. First of all, it is difficult to define what constitutes economic income, as there can be different appropriate definitions of economic income in different countries. For example, Ball et al. (2000) point out that while they used stock returns to represent economic income in measuring how the skewedness of earnings can reflect degrees of conservatism, they also suggest that it may not be suitable for firms in code law countries where there is lower liquidity and lower standards on public disclosure. The various definitions and measures of earnings also make it difficult to use the degree of skewedness and fluctuation of earnings as a measure of conservatism from an empirical standpoint as it is difficult to determine which measure of earnings is relevant and suitable for evaluating the degree of conservatism in different practical situations. For example, when examining the relationship between the skewedness and

fluctuations of earnings and the degree of conservative accounting, Givoly and Hayn (2000) employed return on assets, or the accounting rate of return, as the appropriate measure of earnings. By contrast, in their similar study, Ball et al. (1997) used earnings yield as the measure of earnings, or the accounting income of an enterprise in a given fiscal year scaled by the market value of the enterprise's equity in the previous fiscal year.

### ***Limitations***

Similar to the earnings persistence measure of conservatism, using the degree of skewedness and fluctuation of earnings as a measure of conservatism also suffers from the limitation of correlated variables that may have been omitted. For example, differences in the proportion growth options in relation to existing assets may have caused the recognition of revenue to vary from one country to another. This means that differences in the degree of skewedness and fluctuation of earnings may have actually been caused by real economic effects, rather than degrees of accounting conservatism. In such cases, using the degree of skewedness and fluctuation of earnings as a measure of conservatism is invalid. Finally, in addition to conservatism, other accounting factors may also have affected how economic income is incorporated into accounting income, and, consequently, how the skewedness and fluctuation of earnings are impacted by the asymmetric timeliness of earnings recognition. Ball et al.'s (2000) study did not rule out the possibilities of other economic and/or accounting factors affecting the skewedness and fluctuation of earnings, which makes the use of the degree of skewedness and fluctuation of earnings as a measure of accounting conservatism somewhat dubious.

### **Cumulative accruals**

Givoly and Hayn (2000) noted that the reported cumulative earnings of firms might decrease over time as a result of conservatism. Based on this finding, they argue that the sign and magnitude of cumulative accruals over an extended period of time can be used as an indication of conservative accounting. Givoly and Hayn (2000) suggest that earnings will converge with cash flows for steady-state firms with no growth and neutral accounting policy, which means that their cumulative accruals will also converge to zero. Based on this observation, they suggest that if a firm has consistently negative accruals over an extended period of time, it is a sign that the firm is using conservative accounting practices. Furthermore, the rate at which a firm's negative accruals accumulate is a measure of how the level of conservative accounting has varied over time (Givoly and Hayn, 2000).

Givoly and Hayn's (2000) observation is derived from the expectation underlying the analysis and interpretation of financial statements that have been articulated conceptually in the valuation framework of Ohlson (1995) and Feltham and Ohlson (1995), which states that a firm's accounting performance measures should converge with its economic performance (measured in terms of operating cash flows) over time, and that any deviations of accounting incomes from operating cash flows are transitory and mean reverting.

In many ways, the cumulative accruals approach as developed by Givoly and Hayn (2000) to examine degrees of conservatism is an extension of the body of research focusing on the correlation between cash flows and earnings and how they reflect structural factors such as conservatism in the financial reporting system. What is special about Givoly and Hayn's (2000) study, however, is their detailed study on how changes in accruals reflect changes in the degree of financial reporting. By examining the structural relations between accruals, cash flows, and earnings over the second half of the 20<sup>th</sup> century, Givoly and Hayn (2000) find that profitability of US firms have declined during the current period, while cash flows have not. In the meantime, a large amount of negative non-operating accruals have accumulated. Similar to the findings of Ball et al. (2000), Givoly and Hayn (2000) also find that the distribution of earnings has become increasingly negatively skewed, suggesting that the negative effects of 'bad news' on earnings was recognised more timely than the positive effects of 'good news', which in turn indicates an increase in the level of conservatism of the financial reporting practices of US firms. Therefore, Givoly and Hayn (2000) hypothesised that changes in the level of non-operating accruals might be a measure of the degree of conservative accounting, i.e. cumulative accruals are regarded as a parameter of conservatism.

In determining whether or not changes in reported earnings are a result of conservatism or real changes in firms' economic performance, Givoly and Hayn (2000) employed the ratio of CFO-to-assets as a measure of firm performance and compared the changes of the CFO-to-assets ratio and earnings to determine whether or not changes in reported earnings are caused by changes in firms' underlying economic performance. To identify the factors contributing to the increased volatility of earnings in relation to accounting accruals, Givoly and Hayn (2000) decomposed the variance of return on asset (ROA) in each firm's yearly data with the following formula:

Variance (ROA)

=Variance (CFO/Assets)

+Variance (Accruals/Assets)

+2Covariance(CFO/Assets, Accruals/Assets)

The results of this decomposition show that accounting accruals are the main factor contributing to the variability in earnings, rather than cash flows from operations, as the variance of the ROA's accruals' component increased more than 100% from the 1960s to the 1990s and the covariance between accruals and earnings has declined significantly in the last 15 years of the dataset. This result suggests that accounting accruals, rather than real changes in economic performance, are mainly responsible for driving the change in earnings. This finding also supports Givoly and Hayn's (2000) claim that consistently negative accruals can be regarded as a parameter of conservatism.

### **Assumptions**

The use of accruals as a measure of conservative accounting is based on the premise that conservatism is reflected in the sequencing and timing of the recognition of expenses and revenues relative to their associated cash flows. In confirming that changes in firms' reported earnings are a result of the changes in



the relation between earnings and cash flows, Givoly and Hayn (2000) also assume that cash flows from operations (CFO) are not affected by accrual accounting and provide an independent measure of a firm's economic performance.

### **Advantages**

Unlike other studies on how properties of earnings can be regarded as a parameter of the level of conservatism in financial reporting, Givoly and Hayn's (2000) study examined other alternative explanations for the relation between changes in earnings and changes in the level of cumulative accruals, such as restructuring and mergers and acquisition (M&A) activities. Other possible alternative explanations for the relationship between changes in earnings and changes in the level of cumulative accruals, such as increased cost of retirement benefits and pensions, inflation, and growth, were also ruled out. Because these alternative explanations for the relation between changes in earnings and changes in the level of cumulative accruals have been ruled out by empirical evidence, the use of cumulative accruals as a measure of conservatism is more convincing.

### **Disadvantages**

While cumulative negative non-operating accruals may be a straightforward and quantitative measure of the level of conservatism in financial statements, it can change significantly from one financial reporting period to another, making it almost impossible to evaluate the level of conservative accounting in financial reporting in the short term with cumulative negative non-operating accruals. Indeed, it took Givoly and Hayn (2000) a data timeframe of 50 years to identify the structural relations between the increase in cumulative negative non-operating accruals and the increase in the degree of conservatism in financial reporting. Therefore, cumulative negative non-operating accruals may only be used as a measure of the degree of conservatism in financial reporting over a long period and in retrospect.

### **Limitations**

One of the most obvious limitations of cumulative accruals as an indicator of conservatism is the use of share price changes as an indication of good news or bad news, which may be inaccurate due to the noise and inefficiencies in stock market trading. However, this limitation is also shared by other measures of the degree of conservatism, such as earnings persistence and the degree of skewedness and fluctuations of earnings.

## **Earnings–share return measurement method**

The earnings-share return measurement method relies on the asymmetric timeliness of the incorporation of bad news and good news in earnings to evaluate the level of conservatism. This measurement method was first explored in detail in Basu (1997), who hypothesised and confirmed that the reflection of publicly available bad news in reported earnings is more concurrently sensitive and timely than the reflection of publicly available good news. Based on Basu's (1997) observation, there are two measures of conservatism

from the earnings–share return perspective: the ratio of the bad news regression model slope coefficient over the good news regression model slope coefficient, and the ratio of adjusted R-squared statistics for the bad news regression model over that of the good news regression model.

Basu's (1997) analysis was later extended in the work of Pope and Walker (1999), who proposed five measures of conservatism that are based on the relationship between earnings and share return in addition to the two earnings–share return measures of conservatism. Their five earnings–share-return-based measures of conservatism are developed from the correlation between earnings and share return, which is described in detail with a regression model by Pope and Walker (1999) and is adapted from Basu (1997). They are the ratio of the bad news regression model slope coefficient over the good news regression model slope coefficient; the ratio of adjusted R-squared statistics for the bad news regression model over that of the good news regression model; the distinction between the sensitivity of earnings to good news and the sensitivity of earnings to bad news; the sensitivity of earnings to bad news; and the average earnings/(lagged price) bias.

### **Earnings–share return based measures of conservatism in Basu (1997)**

Please see section 5.2

### **Earnings–share return based measures of conservatism in Pope and Walker (1999)**

Inspired by the empirical analysis of Basu (1997), Pope and Walker (1999) designed a method to measure how the responses of reported earnings to changes in market values change with the nature of earnings news announcements, i.e. whether they are 'good' or 'bad'. Pope and Walker's (1997) model yields several important observations about the measurement of accounting conservatism from an earnings–share return perspective. Pope and Walker's (1999) research formalises and extends Basu's (1997) observations and is based on the theoretical premises that accounting conservatism would cause the asymmetric timeliness of reflecting bad news and good news in earnings. In addition to inspiration from Basu (1997), Pope and Walker's (1999) research also tests the conclusions of Ball et al. (1997), who extended Basu's (1997) methods to the analysis of the asymmetric timeliness of earnings to seven international accounting regimes and found that the sensitivity of earnings to bad news for US firms is higher than UK firms due to the higher level of conservative accounting in the US, which is, in turn, a result of the higher costs of regulation and litigation in the US. Extending from Ball et al.'s (1997) research, Pope and Walker (1999) confirmed their conclusion and showed that the measurement of conservatism may produce different results in different financial reporting jurisdictions, suggesting that there are institutional differences in conservative accounting between different financial reporting jurisdictions.

#### ***Assumptions***

Pope and Walker's (1999) model is to some extent similar to that of Basu's (1997), but is more detailed in capturing the under-recognition/over-recognition of bad/good news in contemporaneous earnings. The regression model used by Pope and Walker (1999) is specified as follows:

$$\frac{X_t}{P_{t-1}} = \frac{1}{k} + \frac{1 - \theta_0}{k} R_t + \frac{r_0 + \theta_0}{k} R_t D_t + \frac{V_t}{P_{t-1}}$$

where  $\frac{1}{k}$  is the cost of equity,  $\theta_0$  is the parameter that captures the degree to which good news is understated in contemporaneous earnings, and  $r_0$  is the parameter that captures the degree to which bad news is overstated in contemporaneous earnings.  $V_t$  represents the impact of earnings news in previous periods on income recognition in the current period, and captures the effects of delayed income recognition and the reversal of accelerated recognition of bad earnings news in multiple periods.  $R_t$  is equal to  $(P_t/P_{t-1}) - 1$ , i.e.  $k(x_t - x_{t-1}) - 1$ .  $D_t$  is a dummy variable, which is 1 if  $R_t$  is negative and 0 if otherwise.

Based on this model, Pope and Walker (1999) proposed five measures of conservatism that are based on the correlation between earnings and share return in addition to the two earnings–share return measures of conservatism found in Basu (1997). They are the ratio of the bad news regression model slope coefficient over the good news regression model slope coefficient, the ratio of adjusted R-squared statistics for the bad news regression model over that of the good news regression model, the difference between the sensitivity of earnings to good news and the sensitivity of earnings to bad news, the sensitivity of earnings to bad news, and the average earnings (lagged price) bias.

Measure 1:

The ratio of the bad news regression model slope coefficient over the good news regression model slope coefficient:

$$C_1 = \frac{(1 + r_0)}{(1 - \theta_0)}$$

where  $r_0$  is the slope coefficient of bad news (measured by negative market-adjusted returns) and  $\theta_0$  is the slope coefficient of good news (measured by positive market-adjusted returns).

Measure 2:

The ratio of adjusted R-squared statistics for the bad news regression model over that of the good news regression model:

$$C_2 = \frac{R^2(\text{Bad news})}{R^2(\text{Good news})}$$

Measure 3:

The difference between the sensitivity of earnings to good news and the sensitivity of earnings to bad news:

Either:  $C3_a = \frac{r_0 + \theta_0}{k}$  or  $C3_b = r_0 + \theta_0$

where  $\theta_0$  is the parameter for measuring the degree to which good news is understated in period t. On the other hand,  $r_0$  represents the degree to which bad news is overstated in period t; and k is the capitalisation rate based on the cost of equity.

Measure 4:

Earnings' sensitivity to bad news:

Either:  $C4_a = \frac{1 + \gamma_0}{k}$  or  $C4_b = 1 + \gamma_0$

where  $r_0$  represents the degree to which bad news is over-recognised in period t, and k is the capitalisation rate based on the cost of equity.

Measure 5:

The average earnings/(lagged price) bias:

$$C5(\text{Total}) = \frac{\theta_0}{k} E(R|Good)P(Good) - \frac{r_0}{k} E(R|Bad)P(Bad)$$

$$C5(Good) = \frac{\theta_0}{k} E(R|Good)P(Good)$$

$$C5(Bad) = -\frac{r_0}{k} E(R|Bad)P(Bad)$$

where  $E(R|Good)$  is the mean value of share return in company-years with good news, and  $E(R|Bad)$  is the mean value of share return in company-years with bad news;  $P(Good)$  is the proportion of company-years with good news in the data sample, and  $P(Bad)$  is the proportion of company-years with bad news in the data sample.  $\theta_0$  is the parameter for measuring the degree to which good news is understated in period t. On the other hand,  $r_0$  represents the degree to which bad news is overstated in period t; k is the capitalisation rate based on the cost of equity.

### ***Advantage***

It is notable that first two measures (C1 and C2) in Pope and Walker (1999) (i.e. the ratio of the bad news slope parameter over the good news slope parameter in the regression model, and the ratio of adjusted R square statistics for bad news over adjusted R square statistics for good news in the regression model) are very similar to the earnings–share return measures of conservative accounting in Basu (1997). However, compared with the measures of conservative accounting in Basu (1997), the first two measures (C1 and C2) have a distinct advantage of being independent of  $1/k$  (k is the capitalisation rate based on the cost of equity), meaning that they can be used to compare the degree of conservative accounting across different financial reporting regimes. In a sense, the third measure (C3) (i.e. the disparity between the sensitivity to bad news and sensitivity to good news in the regression model) can be seen as an improvement over the first two measures (C1 and C2). This is because it measures the disparity between the sensitivity of earnings to both good news and bad news, and does not produce extreme results in some situations like the

first two measures (C1 and C2), which is discussed in more detail in the next section. In Ball et al.'s (1997) empirical tests, the third measure (C3) is greater for accounting regimes in continental law countries than for accounting regimes in civil law countries, which is consistent with the observation that the recognition of earnings under the common law system emphasis more on the reflection of bad news than good news. This empirical test, therefore, confirms the usefulness of the third measure (C3) in capturing the systematic differences in the treatment of bad news and good news across different financial reporting regimes as a measure of conservatism. The fourth measure (C4b), i.e. the sensitivity to bad news, measures the sensitivity of earnings to bad news after potential differences in  $k$  are controlled, and can be an effective measure for cross-country comparison of conservatism, especially when there are distinctive differences in the treatment of bad news across different financial reporting regimes.

Pope and Walker (1997) suggest that, as an alternative to the asymmetric timeliness of earnings' response to good news and bad news, the average effect of asymmetric timeliness of the reported earnings ratio to lagged stock prices can also be used to measure conservatism. Conservatism measures C5(total), C5(bad news), and C5(good news) are developed based on this idea. C5 measures the total effect of the delay in recognising good news and the acceleration in recognising bad news, while C5 (bad news) and C5 (good news) measure the separate effect of the delay in recognising good news and the acceleration in recognising bad news, respectively. The advantage of C5, and C5(total) in particular, is that it can produce exceptionally accurate estimates of  $1/k$  in a long-run stationary state, as it can be linked directly with Pope and Walker's (1997) model. Therefore, C5 is a superior measure of conservatism for long-term predictions.

### ***Disadvantage***

There are several important limitations to Pope and Walker's (1999) earnings–share return measure of accounting conservatism, which weaken its usefulness as a measure of conservatism. First of all, conservatism measures C1 and C2 produce extreme values in situations where there is a very low proportion of contemporaneous good earnings news being reflected in earnings. In these situations, using C1 and C2 as measures of conservatism may be misleading as all financial reporting regimes in which a very low proportion of contemporaneous good earnings news is reflected in earnings will be judged as being equally conservative, despite the differences in how earnings are responsive to bad news in these regimes. Secondly, C3a may not be able to produce reliable measures of conservatism, as it may not be able to reliably determine the speed at which bad news is recognised across different financial reporting regimes. For example, when  $\theta_0 > 0$  and  $r_0 = 1$ , the value of C3a would be positive, although the incorporation of bad news and good news in financial reporting regimes is actually unbiased. Furthermore, C3a is very sensitive to the value of  $k$ . Therefore, Pope and Walker (1999) suggest that C3b would be a more effective measure of conservatism for comparing conservatism across financial reporting regimes if the estimated value of  $k$  is given for each financial reporting regime. With regard to measure C4, the limitation of C4b is that it requires a precise estimate of  $k$  to be effective. Similar to C3 and C4, C5 also suffers from the limitation of being sensitive to the value of  $K$  as the calculation of all three measures of C5 requires an estimated value of  $K$ .

In summary, all of the five measures of conservatism in Pope and Walker (1999) have their own limitations. C1 and C2 may produce extreme and unreliable values. Furthermore, if differences in the treatment of good news and bad news reflect other distinctly different features of a financial reporting regime, rather than the degree of conservatism, then C1 and C2 would fail to properly identify the impact of conservatism. This means that C1 and C2 are not valid measures of conservatism in these situations. Measures C3, C4, and C5 overcome these two limitations, but require an accurate estimate of the cost of capital to be effective.

## **Accrual–cash flow measurement method**

Please see section 5.1

## **Event-driven measurement method**

This method of measuring conservatism uses market responses to earnings-related events, e.g. earnings announcements, to measure the degree of conservative accounting. The rationale of the event-driven method of measuring accounting conservatism is that conservative accounting will result in the different timeliness/persistence with which bad news/good news is reflected in earnings, which in turn will have different impacts on how the market responds to the good news/bad news in earnings announcements. Therefore, by measuring the difference in the market reactions to the bad news/good news in earnings announcements, we can measure the degree of accounting conservatism. This measurement method was first found in McNichols's (1988) research, who finds that share returns are more negatively skewed during the periods of earnings announcements than in periods in which there are no earnings announcements. McNichols (1988) attributed the cause of this phenomenon to the fact that bad news is reflected in earnings in a more timely manner than good news, which in turn is a reflection of the level of conservative accounting. Basu (1997) offers a more formal event-driven measurement method for measuring conservative accounting using the difference between the short-window earnings response coefficient (ERC) for good and bad earnings news.

## **The skewness of the stock return distribution measure of conservatism in McNichols (1988)**

Using individual stock returns and daily equally weighted returns index from the Centre for Research and Security Prices (CRSP), McNichols (1988) documents that prediction errors of stock return distribution are skewed more negatively during periods of earnings announcements than in periods in which earnings are not announced. The rationale for McNichols's (1988) research stems from Beaver's (1968) finding that the variance of changes in stock prices tends to increase in the week when earnings reports are released. According to Beaver (1968), this finding suggests that investors tend to revise their belief about the value

of a stock as they learn about the earnings announced by the company. Such revision is then reflected in the more drastic changes in stock prices around the earnings announcement date. Furthermore, Beaver (1968) also suggests that the pattern of stock price revisions around an earnings announcement date is different from the pattern of stock price revisions during non-earnings announcement periods, with the proportion of extreme negative to positive share price adjustments being more significant during earnings announcement dates than in non-earnings announcement dates. On the basis of Beaver's (1968) findings, McNichols (1988) infers that extreme bad earnings news tends to be disclosed more often in the annual mandatory earnings report than in random and discretionary disclosures of information in non-earnings-announcement dates.

### ***Assumptions***

The development of McNichols's (1988) skewness of stock return distribution measure of conservatism is based on the assumption that the investors learn about the information of a firm through its voluntary disclosures and their own discretionary information search during non-earnings announcement dates. This assumption allows McNichols (1988) to establish a causal relationship between the unwillingness of firms to disclose bad news about their earnings with the increased variance of changes in stock prices and, consequently, the more negatively skewed distribution of prediction errors in stock returns in earnings announcement periods than in non-earnings announcement periods. The implication of this is that the more negative skewness of stock return distribution during earnings announcement dates than during non-earnings announcement dates is associated with bad news being reflected in earnings in a less timely manner than good news, which is a counter-measure of the conservative principle. Therefore, the degree to which stock return distributions are more negatively skewed during earnings announcement dates than during non-earnings announcement dates is an indicator of the level of conservative accounting: the more stock return distributions are negatively skewed during earnings announcement dates than during non-earnings announcement dates, the lower the degree of accounting conservatism.

Another assumption in McNichols's (1988) skewness of stock return distribution measurement of conservatism is that investors have rational expectations of the relationship between firms' disclosure of earnings information and stock prices. Under this assumption, investors believe that management in firms are more likely to provide early disclosure of good earnings news and delayed disclosure of bad earnings news, and, therefore, tend to interpret delayed or non-disclosures as bad news. Therefore, firms that reveal good earnings news before the annual earnings report and bad news on the report date will have positively skewed stock returns in the interim disclosure period, and negatively skewed returns at the earnings report date, while non-disclosing firms will have negatively skewed returns in both the interim disclosure period and at the earnings report date.

### **McNichols's (1988) skewness of stock return distribution measurement of conservatism**

McNichols (1988) developed five measures of skewness to evaluate the difference between the stock return distribution in the time period around earnings announcements and in time periods where there are no earnings announcements. The first measure is:

$$\text{Measure 1} = \left[ \frac{1}{N \sum_{i=1}^N (r_i - \bar{r})^3} \right] / (\hat{\sigma}(r_i))^3$$

where  $r$  denotes the prediction errors of stock return distribution over a time interval and  $N$  denotes the number of firms used in the data sample,  $\bar{r}$  denotes the average of  $r_i$ , and  $\hat{\sigma}$  is the standard deviation of  $r_i$ . Other measures of McNichols's (1988) skewness of stock return distribution are:

$$\text{Measure 2} = \frac{\text{Mean} - \text{Median}}{\text{Standard deviation}}$$

$$\text{Measure 3} = \frac{\text{Median} - 1\% \text{ fractile}}{99\% \text{ fractile} - \text{Median}}$$

$$\text{Measure 4} = \frac{25\% \text{ fractile} - 1\% \text{ fractile}}{99\% \text{ fractile} - 75\% \text{ fractile}}$$

$$\text{Measure 5} = \frac{\text{Median} - \text{Minimum}}{\text{Maximum} - \text{median}}$$

where 'mean' refers to the estimated mean value of  $r_i$ , 'median' refers to the estimated value of the median in  $r_i$ , and 'standard deviation' refers to the estimated standard deviation of  $r_i$ . The numerical fractiles in measures 3, 4, and 5 refer to the value of distributions for which fractions of the data sample of  $r_i$  are below.

The first measure captures the skewness coefficient and represents the degree of symmetry of the stock return distribution during non-earnings announcement and earnings announcement periods, as the skewness coefficient of a perfectly symmetric distribution would be zero, and positively/negatively skewed stock return distributions would have positive/negative skewness coefficients. According to McNichols (1988) and Givoly and Hayn (2006), the skewness coefficient of stock return distribution represents the degree to which stock return distributions are asymmetric during non-earnings announcement and earnings announcement periods, which in turn is associated with the use of conservative accounting principles. Therefore, the skewness coefficient in measure 1 is regarded as a measure of conservative accounting. Measure 2 is another measure of skewness, which has been proposed as an alternative to the skewness coefficient; measure 3 and measure 4 focus on capturing the distance from the median or the 75% fractile to the 99<sup>th</sup> percentile. This distance measures the degree to which the tails of the stock return distribution are symmetric, which in turn is a measure of accounting conservatism according to McNichols (1988) and Givoly and Hayn (2006). Measure 5 measures the distance between the maximum and the median and the minimum and the median, and is another version of measure, which is appropriate for analysing skewness of stock return distribution at the firm level.

### ***Advantage***

The most important strength of McNichols's (1988) skewness of stock return distribution measure of conservatism compared to other measures of conservative accounting discussed in this chapter, is that it is affected by specific accounting relations based on which accounting data in financial statements are



produced. A common weakness of other measurement methods based on accounting data is the difficulty of adjusting the effects of different accounting rules used by firms in the data sample, as the specific accounting policy may differ from firm to firm. By focusing exclusively on the market responses to earnings information through stock return distributions, McNichols's (1988) skewness of share return distribution measure of conservatism has the advantage of systematically measuring the effects of firms' tendency to delay disclosures of bad news (which reflects the degree to which accounting conservative principles are employed) without being impacted by the differences in the accounting policies of individual firms.

### ***Disadvantage and limitations***

A potential problem of McNichols's (1988) skewness of stock return distribution measure of conservatism, as noted by McNichols (1988) herself, is that the difference between the stock return distribution during earnings announcement periods and non-earnings announcement periods tends to be systematically smaller for small and medium companies than for large companies. This means that McNichols's (1988) skewness of stock return distribution measure of conservatism may provide different information about the accounting conservatism of small and large firms. Therefore, McNichols's (1988) skewness of stock return distribution can only be used reliably in the time series analysis of the changes in the conservatism of the financial reporting practices at one firm, and is not applicable for the horizontal analysis of the degree of accounting conservatism across firms when their sizes differ. Therefore, the application of McNichols's (1988) skewness of share return distribution measure of conservatism is limited to the time series analysis of the changes of accounting conservatism in individual firms or groups of firms in similar sizes.

Another important limitation of this method is that it is an indirect measure of accounting conservatism. The skewness of stock return distribution essentially measures the degree to which stock return distributions during earnings announcement periods and non-earnings announcement periods are asymmetric. While McNichols (1988) attributes the cause of this asymmetry to firms' tendency to delay disclosure of bad news until the mandatory earnings announcement date, Givoly and Hayn (2000) suggest that such a tendency is also a reflection of the degree to which conservative accounting principles are used by a firm, i.e. the higher the tendency to delay disclosure of bad news until the mandatory earnings announcement date, the lower the level of conservative accounting in a company. However, the association between firms' tendency to delay disclosure of bad news and their use of conservative accounting principles is based on intuition and lacks empirical evidence.

## **Basu's (1997) earnings response coefficient (ERC) measurement method**

In Basu's (1997) research about the relationship between the conservative principle and the asymmetric timeliness of earnings, he also developed a measure of accounting conservatism based on market events, which is based on the abnormal share return as a result of earnings news. The rationale for this measure of accounting conservatism is that the abnormal return per dollar from unexpected earnings, which is

captured by the earnings response coefficient (ERC) around the time of the earnings news, is larger for good earnings news than for bad earnings news. According to Basu (1997), when a firm discloses earnings-related news, the market will be surprised by the news if it is not in line with their expectations, regardless of whether they are good or bad, and react to the earnings news in relation to its implications for current and future earnings. Therefore, the market will react more significantly to more persistent earnings news. Because of accounting conservatism, Basu (1997) suggests that the persistence of positive earnings news is longer than negative earnings news. Therefore, the market's reaction (evaluated by the earnings response coefficient) to good earnings news, which is more persistent in the presence of accounting conservatism, will be greater than the market reaction to bad earnings news. The more fundamental theoretical foundation of Basu's (1997) ERC measure of conservative accounting is the observation that the timeliness of earnings is asymmetrically smaller for good earnings news than for bad earnings news. As the share market adjusts rationally for the impacts of conservative accounting on reported earnings, the ERC will be asymmetrically higher for positive changes in earnings than for negative changes in earnings. The asymmetry of ERC for positive earnings news and negative earnings news at the time of the earnings announcement captures the effects of accounting conservatism on the market's reaction to earnings news, and can, therefore, be employed as an indicator of conservative accounting.

### ***Assumptions***

Several important assumptions underlie Basu's (1997) ERC measure of conservative accounting. The first and most fundamental assumption in Basu's (1997) ERC measure of conservative accounting is that the short-window ERC, defined as the abnormal stock return per unit of unexpected earnings at the earnings announcement date, captures the information content of earnings news. Basu (1997) derived this assumption from the random walk model developed by Ball and Watts (1972) to determine earnings expectations. Based on this model, Basu (1997) argues that changes in earnings represent unexpected earnings. Furthermore, Basu (1997) found that negative changes in earnings tend to be less persistent than positive changes in earnings. Relating this finding to the observation that more persistent earnings surprises lead to higher earnings response coefficient (Miller and Rock, 1985; Kormendi and Lipe, 1987; Collins and Kothari, 1989), Basu (1987) suggests that firms announcing positive earnings news will have higher coefficients of earnings response than firms announcing negative earnings news. Another assumption of Basu's (1997) ERC measure of conservative accounting is the changes in earnings proxy for the nature of earnings news, i.e. whether it is considered 'good' or 'bad' by the market.

### **Basu's (1997) ERC measurement method**

In order to separate the reaction of the market to the earnings-related news communicated by the earnings announcement, Basu (1997) used the short-window abnormal return around the earnings announcement date, and hypothesized that the slope of positive changes in earnings tends to be higher for negative changes in earnings in the regression of abnormal returns during the earnings announcement period on earnings changes. Theoretically, the difference between the slope of negative changes in earnings and the slope of positive changes in earnings in this regression is the ERC measurement of conservative

accounting. In the regression model, the abnormal return during the earnings announcement period is specified as the dependable variable, and the earnings change is specified as the independent variable:

$$\mu = \alpha_0 + \alpha_1 DX_{it} + \frac{\beta_0 \Delta X_{it}}{P_{it-1}} + \frac{\beta_1 \Delta X_{it}}{P_{it-1}} * DX_{it} \quad (a)$$

where  $X_{it}$  is firm  $i$ 's earnings in the year  $t$ ,  $\Delta X_{it}$  is the earnings change for company  $i$  from year  $t-1$  to year  $t$ ,  $P_{it-1}$  is the stock price at the start of the year. The dependent variable  $\mu$ , or more specifically  $\mu_{i(t+1,t+2)}$ , measures firm  $i$ 's abnormal return in the first three months after the end of the fiscal year, with  $\mu_{it+1}$  and  $\mu_{it+2}$  being the abnormal return in the first three months after the end of the fiscal year.  $DX_{it}$  is the dummy variable, which is equal to one if  $\frac{\Delta X_{it}}{P_{it-1}}$  is greater than zero and is equal to zero if otherwise.

Basu (1997) found that the slope coefficient of abnormal returns on positive earnings news during the announcement period,  $\beta_1$ , is obviously higher than the slope coefficient of abnormal returns on negative earnings news during the announcement period,  $\beta_0$ , confirming his hypothesis that the slope of positive changes in earnings tend to be higher for negative changes in earnings in the regression of abnormal returns during the earnings announcement period on earnings changes as a result of the market's rational adjustment of the effects of conservatism on earnings. Therefore, Basu's (1997) ERC measure of conservative accounting is the difference between  $\beta_0$  and  $\beta_1$  ( $\beta_0 - \beta_1$ ) in regression model (a).

### ***Advantage***

Similar to McNichols (1988), the strength of Basu's (1997) ERC measure of accounting conservatism lies in its focus on market reactions to earnings announcements to analyse the effects of accounting conservatism. By using a short window data timeframe in stock abnormal returns to positive changes in earnings and negative changes in earnings, Basu (1997) employs an event-driven method to measuring the effects of conservative accounting on earnings through the market's interpretation of earnings announcements, which is reflected in the differences in earnings response coefficient relating to positive and negative changes in earnings. Because Basu (1997) assumes that the market will adjust rationally for the impacts of conservative accounting on earnings, Basu's (1997) ERC measure of conservative accounting relies on the aggregate wisdom of the market in interpreting the accounting information embedded in earnings announcements, rather than on analysis of specific items in the financial statements, which might be considered more straightforward and more accurate, depending on the efficiency of the market.

### ***Disadvantage and limitations***

There are several weaknesses and limitations of Basu's (1997) ERC measure of conservative accounting. First of all, a potential weakness of Basu's (1997) ERC measure of conservative accounting is whether or not changes in earnings can be considered as reliable proxies for the nature of earnings news. In particular, changes in earnings may be better proxies for good earnings news than bad earnings news. Secondly, Basu's (1997) ERC measure of conservative accounting also suffers from the same weaknesses of the other indicators of conservatism proposed by Basu (1997), i.e. the possibility that factors other than accounting

conservatism might be the cause of the asymmetric earnings response coefficient to positive and negative changes in earnings. For example, Basu's (1997) own study on how the impacts of conservative accounting on earnings varies with the length of the measurement interval shows that the impact of conservative accounting on earnings will decrease as the measurement interval increases. Therefore, Basu's (1997) earnings response coefficient (ERC) may not be a reliable indicator of conservative accounting, especially when measurement intervals are long, as the impacts of conservative accounting on the ERC after earnings announcements vary with the measurement interval. Thirdly, Basu (1997) also listed the increased exposure of auditors to legal liabilities as a possible explanation for the asymmetric earnings response coefficient to positive and negative changes in earnings after earnings announcements. Because there are factors other than conservative accounting affecting the degree to which the earnings responses coefficient to negative and to positive changes in earnings are asymmetric, using Basu's (1997) ERC as a measure of accounting conservatism is inaccurate unless all other factors affect the difference in the earnings responses coefficient to positive and to negative changes in earnings are held constant. Therefore, the application of this method of measuring accounting conservatism is limited to when this is possible.

## References:

Aharony, J., Yuan, H., & Wang, J. (2005). *Related party transactions: A “real” means of earnings management and tunneling during the IPO process in China*. Working paper, Singapore Management University.

Ahmed, A.S. and Duellman, S. (2007) Accounting conservatism and board of director characteristics: An empirical analysis. *Journal of accounting and economics*. 43 (2), pp. 411–437.

Ahmed, A.S. and Duellman, S. (2011) Evidence on the role of accounting conservatism in monitoring managers’ investment decisions. *Accounting & Finance*. 51 (3), pp. 609–633.

Ahmed, A.S. and Duellman, S. (2013) Managerial overconfidence and accounting conservatism. *Journal of Accounting Research*. 51 (1), pp. 1–30.

Ahmed, A.S., Billings, B.K., Morton, R.M. and Stanford-Harris, M. (2002) The role of accounting conservatism in mitigating bondholder-shareholder conflicts over dividend policy and in reducing debt costs. *The Accounting Review*. 77 (4), pp. 867–890.

Aisbitt, S., 2002. Tax and accounting rules: some recent developments. *European Business Review*, 14(2), pp.92-97.

André, P., Filip, A. and Paugam, L. (2015) The effect of mandatory IFRS adoption on conditional conservatism in Europe. *Journal of Business Finance & Accounting*. 42 (3–4), pp. 482–514.

Anon, 2016. “what is Conservatism?”-Communication of finance and accounting 1982 (08). [online] Wuxizazhi.cnki.net. Available at: <<http://wuxizazhi.cnki.net/Search/CKTX198208047.html>> [Accessed 25 Aug. 2016].

Ashbaugh-Skaife, H., D. Collins and W. Kinney. 2005. The Discovery and Consequences of

Internal Control Deficiencies Prior to SOX-Mandated Audits. Working paper. University of Iowa. September.

Balachandran, S. and Mohanram, P. (2011) Is the decline in the value relevance of accounting driven by increased conservatism? *Review of Accounting Studies*. 16 (2), pp. 272–301.

Ball, R. and Shivakumar, L., 2005. Earnings quality in UK private firms: comparative loss recognition timeliness. *Journal of Accounting and Economics*, 39(1), pp.83-128.

Ball, R. and Shivakumar, L., 2005. The Role of Accruals in Asymmetrically Timely Gain and Loss Recognition. *SSRN Electronic Journal*.

Ball, R., Kothari, S. and Robin, A., 2000. The effect of international institutional factors on properties of accounting earnings. *Journal of Accounting and Economics*, 29(1), pp.1-51.

Bandyopadhyay, S.P., Chen, C., Huang, A.G. and Jha, R. (2010) Accounting Conservatism and the Temporal Trends in Current Earnings' Ability to Predict Future Cash Flows versus Future Earnings: Evidence on the Trade-off between Relevance and Reliability. *Contemporary Accounting Research*. 27 (2), pp. 413–460.

Barth, M. E., W. R. Landsman, M. Lang, and C. Williams. 2006. Accounting Quality: International Accounting Standards and US GAAP. Working paper, University of North Carolina and Stanford University.

Basu, S., 1997. The conservatism principle and the asymmetric timeliness of earnings<sup>1</sup>. *Journal of Accounting and Economics*, 24(1), pp.3-37.

Beaver, W. and Ryan, S., 2005. Conditional and Unconditional Conservatism: Concepts and Modeling. *Review of Accounting Studies*, 10(2-3), pp.269-309.

Beaver, W., 1968. The Information Content of Annual Earnings Announcements. *Journal of Accounting Research*, 6, p.67.

Beaver, W., 1993. Conservatism. Working paper, Stanford University (presented at the American Accounting Association national meeting, San Francisco, CA).

Benston, G., 1969. The Value of the SEC's Accounting Disclosure Requirements. *Accounting Review*, 44, pp.515–532.

Bertomeu, J., Darrough, M. and Xue, W. (2017) Optimal conservatism with earnings manipulation. *Contemporary Accounting Research*. 34 (1), pp. 252–284.

Bliss, J., 1924. *Management through accounts*. New York: The Ronald Press Co.

Board, F.A.S. (1980) Statement of Financial Accounting Concepts No. 2: Qualitative Characteristics of Accounting Information. (no place) Financial Accounting Standards Board.

Board, F.A.S. (2005) Board meeting handout: Conceptual framework.

Board, F.A.S. (2010) Statement of Financial Accounting Concepts No. 8, Conceptual Framework for Financial Reporting. Financial accounting Foundation, Norwalk.

Brooks, L. and Buckmaster, D., 1976. Further Evidence of the Time Series Properties of Accounting Income. *The Journal of Finance*, 31(5), p.1359.

Bushman, R. and Piotroski, J., 2006. Financial reporting incentives for conservative accounting: The influence of legal and political institutions. *Journal of Accounting and Economics*, 42(1-2), pp.107-148.

Cai, X., Li, Z. and Zhang, W., 2003. China's' Empirical Accounting Study Review. *China Accounting and Finance Review*, 5(2), pp.155-215.

Chan, A.L.-C., Lin, S.W. and Strong, N. (2009) Accounting conservatism and the cost of equity capital: UK evidence. *Managerial Finance*. 35 (4), pp. 325–345.

Chandra, U., Wasley, C., Waymire, G., 2004. Income conservatism in the U.S. technology sector. Financial Research and Policy Working Paper No. FR 04-01. Working Paper, University of Rochester.

Chatfield, M., 1974. *A History of Accounting Thought*. Hinsdale, Illinois: The Dryden Press.

Chen, D., Shi, X. and Chen, X., 2003. Company Management and Cash Dividends: a Study Based on the Case of the Foshan Illumination Company. *Management World*, 2003(8).

Chen, H., Chen, J.Z., Lobo, G.J. and Wang, Y. (2010) Association between borrower and lender state ownership and accounting conservatism. *Journal of Accounting Research*. 48 (5), pp. 973–1014.

Chen, L.H., Folsom, D.M., Paek, W. and Sami, H. (2013) Accounting conservatism, earnings persistence, and pricing multiples on earnings. *Accounting Horizons*. 28 (2), pp. 233–260.

Chen, X. and Huang, D., 2006. Study on Sequential Evolution and Industry Characteristics of Chinese-listed Companies Accounting Conservatism. *Securities Market Herald*, 4, pp.59-65.

Chen, X. and Li, J., 2001. Exploring the Role of Local Government Fiscal Supports in Accounting Performance of the Listed Companies. *Accounting Research*, 12, pp.20-27.

Cheng, C.S., Huang, H.H. and Li, Y. (2015) Hedge fund intervention and accounting conservatism. *Contemporary Accounting Research*. 32 (1), pp. 392–421.

Claessens, S., Djankov, S. and Lang, L., 2000. The separation of ownership and control in East Asian Corporations. *Journal of Financial Economics*, 58(1-2), pp.81-112.

Collins, D.W., Maydew, E.L. and Weiss, I.S. (1997) Changes in the value-relevance of earnings and book values over the past forty years. *Journal of accounting and economics*. 24 (1), pp. 39–67.

Dai, D. and Yao, S., 2006. An Analysis on the Book-Tax Differences and Its Institutional



Factors Empirical Evidence from Listed Companies in China. *Journal of Finance and Economics*, 32(5), pp.48-59.

Dai, D., Yao, S., and Mao, X., 2005. An Analysis on the Book-Tax Differences, Earnings Management and Corporate Tax Avoidance Behavior. Work Paper. International Symposium of Accounting and Finance Theory.

Dechow, P., 1994. Accounting earnings and cash flows as measures of firm performance. *Journal of Accounting and Economics*, 18(1), pp.3-42.

Dechow, P., Ge, W. and Schrand, C. (2010) Understanding earnings quality: A review of the proxies, their determinants and their consequences. *Journal of accounting and economics*. 50 (2), pp. 344–401.

Dechow, P., Kothari, S. and L. Watts, R., 1998. The relation between earnings and cash flows. *Journal of Accounting and Economics*, 25(2), pp.133-168.

Desai, M., 2003. The Divergence between Book Income and Tax Income. *Tax Policy and the Economy*, 17, pp.169-206.

Dichev, I.D. and Tang, V.W. (2008) Matching and the changing properties of accounting earnings over the last 40 years. *The Accounting Review*. 83 (6), pp. 1425–1460.

Dietrich, J., Muller, K. and Riedl, E., 2007. Asymmetric timeliness tests of accounting conservatism. *Review of Accounting Studies*, 12(1), pp.95-124.

Fan, J. and Wong, T., 2002. Corporate ownership structure and the informativeness of accounting earnings in East Asia. *Journal of Accounting and Economics*, 33(3), pp.401-425.

Feltham, G. and Ohlson, J., 1995. Valuation and Clean Surplus Accounting for Operating and Financial Activities. *Contemporary Accounting Research*, 11(2), pp.689-731.

Francis, B., Hasan, I. and Wu, Q. (2013) The benefits of conservative accounting to

- shareholders: Evidence from the financial crisis. *Accounting Horizons*. 27 (2), pp. 319–346.
- Francis, J. and Schipper, K. (1999) Have financial statements lost their relevance? *Journal of accounting Research*. 37 (2), pp. 319–352.
- Francis, J., LaFond, R., Olsson, P. and Schipper, K. (2005) The market pricing of accruals quality. *Journal of accounting and economics*. 39 (2), pp. 295–327.
- Francis, J., LaFond, R., Olsson, P.M. and Schipper, K. (2004) Costs of equity and earnings attributes. *The accounting review*. 79 (4), pp. 967–1010.
- Francis, J.R. and Martin, X. (2010) Acquisition profitability and timely loss recognition. *Journal of accounting and economics*. 49 (1), pp. 161–178.
- Frydlender, A. and Pham, D., 1996. Relationships between accounting and taxation in France. *European Accounting Review*, 5(sup1), pp.845-857.
- Gigler, F., Kanodia, C., Sapra, H. and Venugopalan, R. (2009) Accounting conservatism and the efficiency of debt contracts. *Journal of Accounting Research*. 47 (3), pp. 767–797.
- Goh, B.W. and Li, D. (2011) Internal controls and conditional conservatism. *The Accounting Review*. 86 (3), pp. 975–1005.
- Gorton, G. and Schmid, F., 2000. Universal banking and the performance of German firms. *Journal of Financial Economics*, 58(1-2), pp.29-80.
- Grossman, S. and Hart, O., 1986. The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration. *Journal of Political Economy*, 94(4), pp.691-719.
- Helbok, G. and Walker, M. (2004) On the nature and rationality of analysts' forecasts under earnings conservatism. *The British Accounting Review*. 36 (1), pp. 45–77.
- Holthausen, R. and Watts, R., 2001. The relevance of the value-relevance literature for

financial accounting standard setting. *Journal of Accounting and Economics*, 31(1-3), pp.3-75.

Hui, K.W., Klasa, S. and Yeung, P.E. (2012) Corporate suppliers and customers and accounting conservatism. *Journal of Accounting and Economics*. 53 (1), pp. 115–135.

Hui, K.W., Matsunaga, S. and Morse, D. (2009) The impact of conservatism on management earnings forecasts. *Journal of Accounting and Economics*. 47 (3), pp. 192–207.

Huijgen, C. and Lubberink, M., 2005. Earnings Conservatism, Litigation and Contracting: The Case of Cross-Listed Firms. *Journal of Business Finance & Accounting*, 32(7-8), pp.1275-1309.

Iyengar, R.J. and Zampelli, E.M. (2010) Does accounting conservatism pay? *Accounting & Finance*. 50 (1), pp. 121–142.

Jackson, S.B. and Liu, X.K. (2010) The allowance for uncollectible accounts, conservatism, and earnings management. *Journal of Accounting Research*. 48 (3), pp. 565–601.

James, S. and Nobes, C., 2002. *The Economics of Taxation: Principles, Policy and Practice*, 7th ed. Harlow: Financial Times/Prentice Hall.

Jayaraman, S. (2012) The effect of enforcement on timely loss recognition: Evidence from insider trading laws. *Journal of Accounting and Economics*. 53 (1), pp. 77–97.

Jayaraman, S. and Shivakumar, L. (2013) Agency-based demand for conservatism: evidence from state adoption of antitakeover laws. *Review of Accounting Studies*. 18 (1), pp. 95–134.

Jensen, M. and Meckling, W., 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), pp.305-360.

Jensen, M.C. and Meckling, W.H. (1976) Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial economics*. 3 (4), pp. 305–360.

Jiang, X. and Yang, M. (2016) Properties of optimal accounting rules in a signaling game. *Journal of Accounting and Economics*.

Johnson, S., Boone, P., Breach, A., Friedman, E., 2000. Corporate governance in the Asian financial crisis, *Journal of Financial Economics*, 58, pp.141-186.

Johnson, S., La Porta, R., Lopez-de-Silanes, F., Shleifer, A., 2000. Tunneling. *American Economic Review Papers and Proceedings*, 90, pp.22-27.

Ke, B., YOUNG, D. and ZHUANG, Z. (2013) Mandatory IFRS Adoption and Accounting Conservatism.

Kellogg, R.L. 1984. Accounting activities, security prices, and class action lawsuits. *Journal of Accounting & Economics*, 6 (December), pp.185-204.

Khan, M. and Watts, R.L. (2009) Estimation and empirical properties of a firm-year measure of accounting conservatism. *Journal of accounting and Economics*. 48 (2), pp. 132–150.

Kim, J.-B. and Zhang, L. (2013) Accounting conservatism and stock price crash risk: Firm-level evidence.

Kim, M. and Kross, W. (2005) The ability of earnings to predict future operating cash flows has been increasing—not decreasing. *Journal of Accounting Research*. 43 (5), pp. 753–780.

Kim, Y., Li, S., Pan, C. and Zuo, L. (2013) The role of accounting conservatism in the equity market: Evidence from seasoned equity offerings. *The Accounting Review*. 88 (4), pp. 1327–1356.

Kothari, S. and Sloan, R., 1992. Information in prices about future earnings. *Journal of Accounting and Economics*, 15(2-3), pp.143-171.

Kothari, S.P., Lys, T., Smith, C.W. and Watts, R.L. 1988. Auditor liability and information disclosure. *Journal of Accounting, Auditing and Finance*, 3 (Fall), pp.307-339.

Kravit, T.D. (2014) Accounting conservatism and managerial risk-taking: Corporate acquisitions. *Journal of Accounting and Economics*. 57 (2), pp. 218–240.

Lafond, R. and Roychowdhury, S. (2008) Managerial ownership and accounting conservatism. *Journal of accounting research*. 46 (1), pp. 101–135.

LaFond, R. and Watts, R.L. (2008) The information role of conservatism. *The Accounting Review*. 83 (2), pp. 447–478.

Lara, J.M.G., Osma, B.G. and Penalva, F. (2009) Accounting conservatism and corporate governance. *Review of accounting studies*. 14 (1), pp. 161–201.

Lara, J.M.G., Osma, B.G. and Penalva, F. (2011) Conditional conservatism and cost of capital. *Review of Accounting Studies*. 16 (2), pp. 247–271.

Lara, J.M.G., Osma, B.G. and Penalva, F. (2016) Accounting conservatism and firm investment efficiency. *Journal of Accounting and Economics*. 61 (1), pp. 221–238.

Lawrence, A., Sloan, R. and Sun, E. (2017) Why Are Losses Less Persistent Than Profits? Curtailments vs. Conservatism. *Management Science*.

Lev, B. and Zarowin, P. (1999) The boundaries of financial reporting and how to extend them. *Journal of Accounting research*. 37 (2), pp. 353–385.

Li, W., 2007. The Economic Consequences of Government Regulation on Accounting Information Disclosure: Evidence from Chinese Security Market. *Accounting Research*, 8, pp.13-21.

Li, Y. and Li, R., 2005. The Impact of Earnings Management on Accounting Conservatism: Evidence from Listed Companies in Mainland China. *China Accounting and Finance Review*, 7(3), pp.1-56.

Liu, S., Sun, P. and Liu, N., 2003. The Ultimate Ownership and Its Shareholding Structures:

Does It Matter for Corporate Performance. *China Management Studies*, 2003(4), pp.51-62.

Louis, H., Lys, T.Z. and Sun, A.X. (2014) Conservatism, analyst ability, and forecast error: evidence on financial statement users' ability to account for conservatism.

Louis, H., Sun, A.X. and Urcan, O. (2012) Value of cash holdings and accounting conservatism. *Contemporary Accounting Research*. 29 (4), pp. 1249–1271.

Manzon, G. and Plesko, G., 2002. The Relation Between Financial and Tax Reporting Measures of Income. *Tax Law Review*, 55, pp.175-214.

Martin, X. and Roychowdhury, S. (2015) Do financial market developments influence accounting practices? Credit default swaps and borrowers' reporting conservatism. *Journal of Accounting and Economics*. 59 (1), pp. 80–104.

McNichols, M., 1988. A comparison of the skewness of stock return distributions at earnings and non-earnings announcement dates. *Journal of Accounting and Economics*, 10(3), pp.239-273.

Mensah, Y.M., Song, X. and Ho, S.S. (2004) The effect of conservatism on analysts' annual earnings forecast accuracy and dispersion. *Journal of Accounting, Auditing & Finance*. 19 (2), pp. 159–183.

Miller, M. and Modigliani, F., 1961. Dividend Policy, Growth, and the Valuation of Shares. *The Journal of Business*, 34(4), p.411.

Monahan, S.J. (2005) Conservatism, growth and the role of accounting numbers in the fundamental analysis process. *Review of Accounting Studies*. 10 (2), pp. 227–260.

Myers, S., 1977. Determinants of corporate borrowing. *Journal of Financial Economics*, 5(2), pp.147-175.

Niu, J. and Wang, L., 2006. Accounting Standards Reform and Conservatism. In: *Symposium*

*of accounting and management in 2006*. Beijing: Renmin University of China, Tamkang University.

Nobes, C. and Parker, R., 2002. *Comparative international accounting*. 7th ed. Harlow: Financial Times/Prentice Hall.

O'connell, V. (2006) The impact of accounting conservatism on the compensation relevance of UK earnings. *European Accounting Review*. 15 (4), pp. 627–649.

Pae, J. and Thornton, D.B. (2010) Association between accounting conservatism and analysts' forecast inefficiency. *Asia-Pacific Journal of Financial Studies*. 39 (2), pp. 171–197.

Pae, J., Thornton, D. and Welker, M., 2005. The Link between Earnings Conservatism and the Price-to-Book Ratio. *Contemporary Accounting Research*, 22(3), pp.693-717.

Patatoukas, P. and Thomas, J., 2011. More Evidence of Bias in the Differential Timeliness Measure of Conditional Conservatism. *The Accounting Review*, 86(5), pp.1765-1793.

Paton, W., 1948. Accounting procedures and private enterprise. *Journal of Accountancy*, April, pp.181-199.

Penman, S.H. and Zhang, X.-J. (2002) Accounting conservatism, the quality of earnings, and stock returns. *The accounting review*. 77 (2), pp. 237–264.

Pope, P. and Walker, M., 1999. International Differences in the Timeliness, Conservatism, and Classification of Earnings. *Journal of Accounting Research*, 37, p.53.

Qiang, X., 2007. The Effects of Contracting, Litigation, Regulation, and Tax Costs on Conditional and Unconditional Conservatism: Cross-Sectional Evidence at the Firm Level. *The Accounting Review*, 82(3), pp.759-796.

Qu, X. and Qiu, Y., 2007. Imposed Institutional Change and Earnings Conservatism - Evidence from Stock Market in China. *Accounting Research*, 7, pp.20-28.

Richardson, G. and Tinaikar, S., 2004. Accounting based valuation models: what have we learned?. *Accounting & Finance*, 44(2), pp.223-255.

Ruch, G.W. and Taylor, G. (2015) Accounting conservatism: A review of the literature. *Journal of Accounting Literature*. 34 pp. 17–38.

Shackelford, D. and Shevlin, T., 2001. Empirical tax research in accounting. *Journal of Accounting and Economics*, 31(1-3), pp.321-387.

Sterling, R., 1970. *Theory of the measurement of enterprise income*. Lawrence: University Press of Kansas.

Sun, Z., Liu, F., and Wang, H. 2005. Debt, Corporate Governance, and Accounting Conservatism China Accounting and Finance Review, 7 (2), pp. 112–173.

Wakil, G., 2014. Market-to-book ratio and conditional conservatism: firms' voluntary expensing of employee stock options. *Accounting Research Journal*, 27(2), pp.124-149.

Walker, R., 1992. The SEC's Ban on Upward Asset Revaluations and the Disclosure of Current Values. *Abacus*, 28(1), pp.3-35.

Watts, R., 1977. Corporate Financial Statements, A Product of the Market and Political Processes. *Australian Journal of Management*, 2(1), pp.53-75.

Watts, R., 2003. Conservatism in Accounting Part I: Explanations and Implications. *Accounting Horizons*, 17(3), pp.207-221.

Watts, R., 2003. Conservatism in Accounting Part II: Evidence and Research Opportunities. *Accounting Horizons*, 17(4), pp.287-301.

Watts, R.L., and Zimmerman, J.L., 1979. The demand for and supply of accounting theories: The market for excuses. *The Accounting Review*, 54 (April), pp.273-305



Watts, R.L., and Zimmerman, J.L., 1986. *Positive Accounting Theory*. Englewood Cliffs, NJ: Prentice-Hall.

Watts, Ross L. 1993. A proposal for research on conservatism. Working paper, University of Rochester (presented at American Accounting Association Annual Meeting, San Francisco, CA).

Wittenberg-Moerman, R. (2008) The role of information asymmetry and financial reporting quality in debt trading: Evidence from the secondary loan market. *Journal of Accounting and Economics*. 46 (2), pp. 240–260.

Yu, P., 2008. Financial Restatements and Corporate Governance of China's listed companies. Working paper. Zhongnan University of Economics and Law.

Zeff, S.A. 1972. Forging Accounting Principles in Five Countries: A History and Analysis of Trends 1971. Arthur Andersen Lecture Series. Champaign, IL: Stipes Publishing Company.

Zeng, L., Cheng, W. and Yan, J., 2008. Accounting System and Earnings Conservatism. *Luoja Management Review*, 2008(2).

Zhang, J. (2008) The contracting benefits of accounting conservatism to lenders and borrowers. *Journal of accounting and economics*. 45 (1), pp. 27–54.

Zhang, W., Zhou, L. and Gu, Q., 2003. The Mechanism of Firm Exit in Economic Transition : An Empirical Analysis for Zhongguancun Science Park of Beijing. *Economic Research Journal*, 2003(10-13).

Zhu, K. and Chen, X., 2006. Bank-Firm Relationship and Accounting Conservatism. *China Management Studies*, 2006(1), pp.30-41.

Zhu, X., 2006. An Empirical Study of Accounting Control and Earnings Quality Relationship. *Finance & Trade Economics*, 5, pp.39-45.